Office Management and AMERICAN BUSINESS

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The personnel paradox: people seek work while jobs still seek people

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Gift firm lowers inventory, improves service with new system

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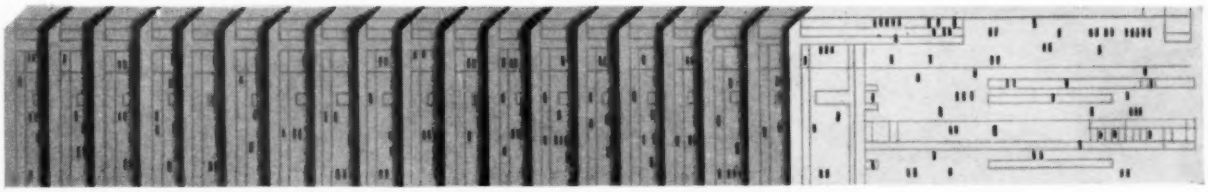

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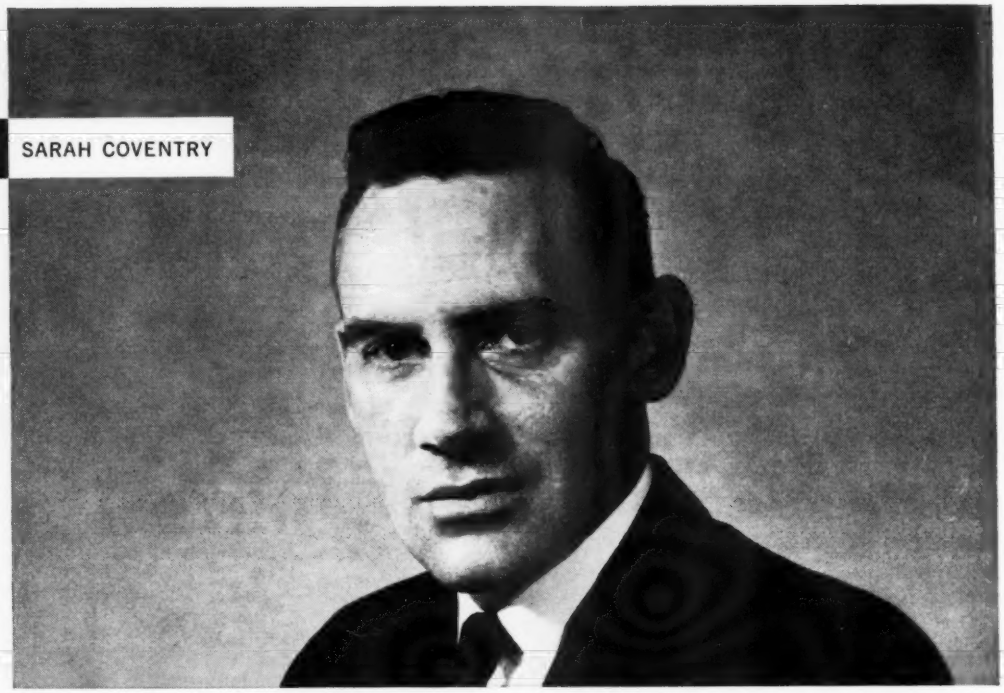

John T. Joyce, Executive Vice-President and General Manager of Sarah Coventry Inc.

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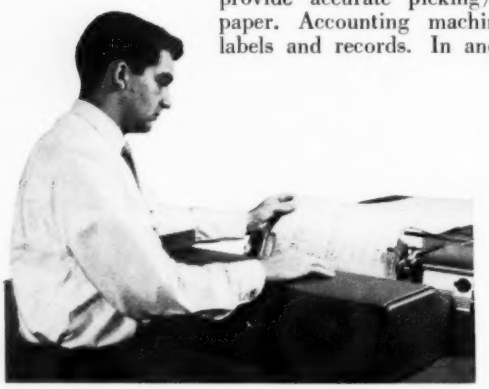

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Electronics manufacturers displayed the latest of their wares for the "total information systems" recommended at the American Management Association's Electronics Conference in New York last month. *(See story, page 22.)*

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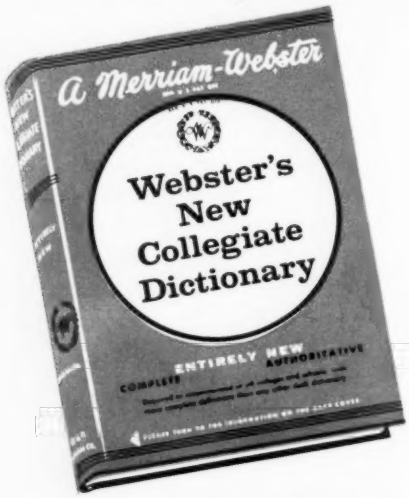

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Tenth Annual Meeting and Convention, National Microfilm Association, Chicago, April 4-6.

Sponsor: National Microfilm Association.

Place: Hotel Sherman.

Sixteenth Annual Management Engineering Conference, New York, April 6, 7.

Sponsors: Society for Advancement of Management and Management Division of American Society of Mechanical Engineers.

Place: Statler Hilton.

CIA Eastern Area Conference. Washington, D. C., April 6-8.

Sponsor: Controllers Institute of America.

Place: Shoreham Hotel.

OEMI Business Equipment Exposition, New York, April 17-21.

Sponsor: Office Equipment Manufacturers Exhibits, Inc.

Place: New York Coliseum.

CIA Western Area Conference. Phoenix, April 20-22.

Sponsor: Controllers Institute of America.

Place: Arizona Biltmore.

Northeastern New York Business Show. Albany, N. Y., April 19-21.

Sponsor: Albany Chapter, National Association of Accountants.

Place: 27th Division Headquarters Armory.

New England Business Equipment Exposition. Boston, April 24-26.

Sponsor: National Office Management Association.

Place: First Cadet Corps Armory.

Fourth Annual Conference on Records Management, New York, May 1, 2.

Sponsor: Association of Records Executives and Administrators.

Place: Hotel Roosevelt.

ASPA 13th Annual Conference. Minneapolis, May 2-4.

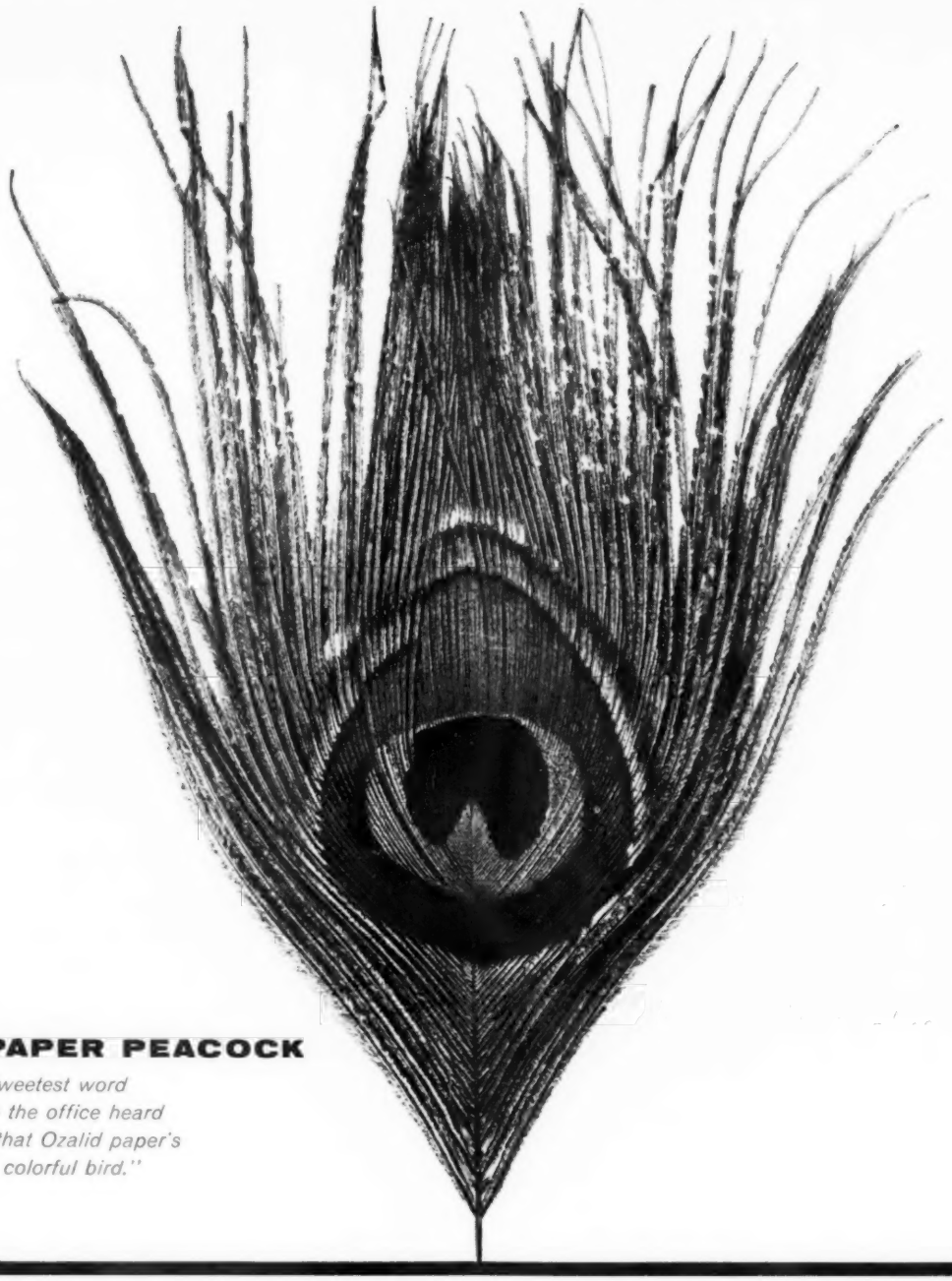
Sponsor: American Society for Personnel Administration.

Place: Hotel Radisson.

NOMA International Conference and Office Exposition. St. Louis, May 7-11.

Sponsor: National Office Management Association.

Place: Sheraton-Jefferson Hotel, Keil Auditorium.



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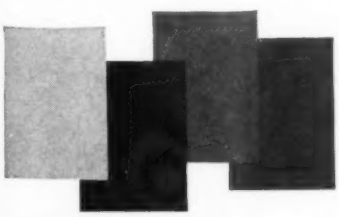

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BOOKS

SIMPLIFYING UNEMPLOYMENT INSURANCE OBJECTIVES, *by Harry Malisoff, California Institute of Technology, Pasadena, Calif., 32 pp.,* $2.00. This short booklet by a professor of economics at Brooklyn College appraises the Federal-state system of unemployment insurance at the end of its first 25 years under the Social Security Act.

EMPLOYEE COMMUNCATIONS IN ACTION, *By Robert Newcomb and Marg Sammons, Harper & Brothers, New York,* 337 *pp.,* $5.75. The authors are a husband-and-wife management consulting team in Chicago. Their book, in the words of the publisher, is a "realistic, experience-seasoned handbook for effective communication with employees." This description appears to be more accurate than most dust jacket blurbs, and the book is a strong candidate for the novice personnel manager's library.

ELECTRONIC DATA PROCESSING AND AUDITING, *by Felix Kaufman, C.P.A., Ronald Press Co., New York,* 180 *pp.,* $6.00. Mr. Kaufman is a partner of Lybrand, Ross Bros. & Montgomery and a popular contributor to the former *American Business* magazine. His views on electronic data processing are much respected among accountants and in the computing industry. In this latest work, he avoids the "how to" approach while making available to management guides for controlling the computer system. The subjects covered consist of the standard applications of a computer – payroll, sales analysis, accounts receivable, disbursements, and auditing.

LEADERSHIP AND ORGANIZATION, *by Robert Tannenbaum, Irving R. Weschler, and Fred Massarik, McGraw-Hill Book Co., Inc., New York,* 456 *pp.,* $7.50. Ten years of research by a study group in human relations at UCLA are represented in this book. Part of the McGraw-Hill Series in Management, this work is devoted to the behavioral science approach to leadership, both in and out of business.

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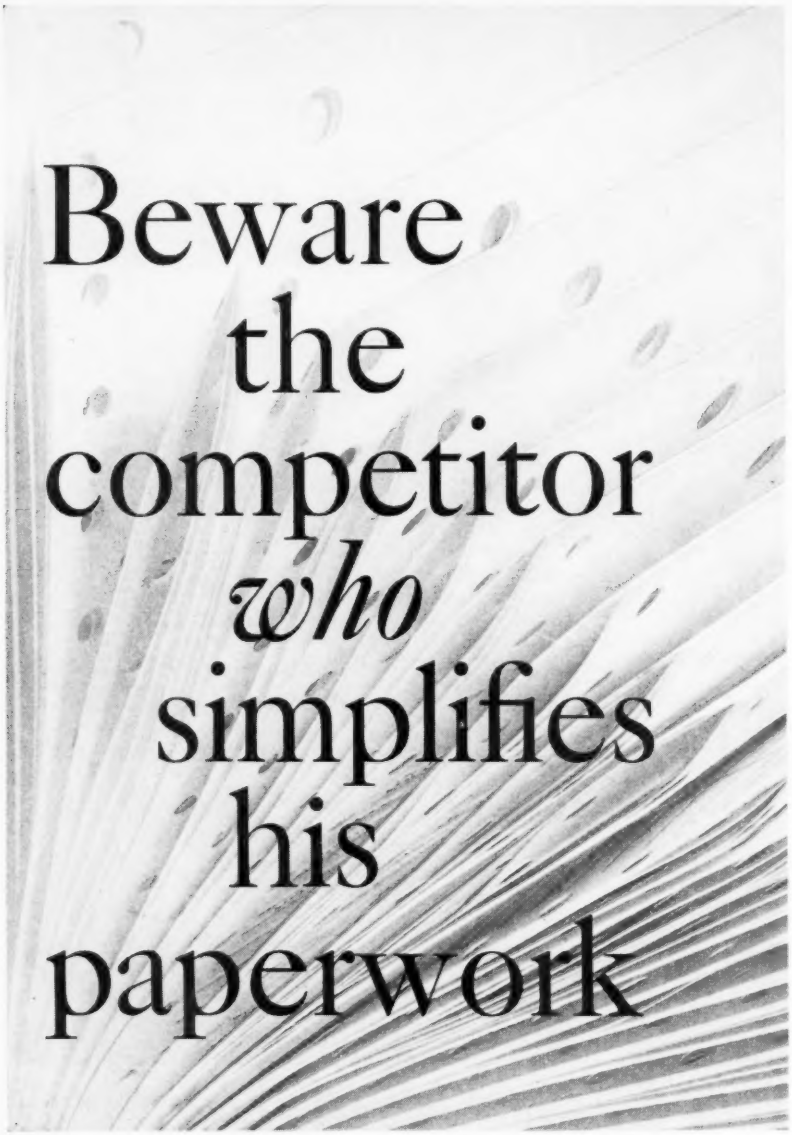

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Administrative Management will be magazine's new name

Effective with the May issue, *Administrative Management* will become the name of this magazine. The new name replaces *Office Management and American Business*, used for the one year since Andrew Geyer-McAllister, Inc., purchased *American Business* and merged it with *Office Management*. Reasons behind the name change are discussed in the editorial on page 84.

The change in name was announced by Donald McAllister, publisher of the magazine and president of Andrew Geyer-McAllister, Inc., which also publishes *The Gift and Art Buyer* and *Geyer's Dealer Topics*.

The magazine will continue its editorial coverage of the office-centered administrative activities in American business but will emphasize the expanding nature of these activities.

This Month

Despite the five-and-one-half-million unemployment total, Editor ROBERT SMITH reports no let-up in the office's needs for high-quality manpower . . . "The total management information system" was stressed at the American Management Association's data processing conference . . . "Office of the Year" Award winners are shown this month; complete stories will follow next month . . . The Business Equipment Exposition, which opens in New York April 17, is previewed . . . No. 6 in the "Data processing for small business" series reveals how a giftware firm lowered its inventory and improved service with a low-cost data processing system . . . An invoicing system that improves plant-office communications is described by JAMES CHALLENGER, general manager of Capital Pipe & Steel Products, Inc. . . . Office Planner ROBERT GAD exposes some of the subterfuge in office design . . . this month's "Tools of the Office" feature is devoted to duplicating processes and equipment . . . the editorial explains this magazine's change in name from *Office Management and American Business* to *Administrative Management*, effective next month.

BUSINESS HAS ITS PEACE CORPS, TOO

IN THE flurry of controversy over the newly created Peace Corps, it is sometimes forgotten that the idea behind it is not exactly new: it is simply the sponsorship and the scope of the program which is novel. American businesses have been doing the same type of training on one level in many of the more backward areas of the world for several years, and American churches and charitable organizations have been doing it on another level for generations. The motives of the average commercial company in training native technicians, workers, and clerks in areas where it had developments were not entirely altruistic, of course. Nevertheless, the results were beneficial to the recipients of the training, and to the economy of the area.

And, in general, the more widespread the American business influence has been in a given area, the more stable and prosperous that area has become and remained, and the firmer the ties between the two nations have been.

There are notorious exceptions, of course, where political pressures and events have brought about a rejection of all things American. But, by and large, the countries where our business interests have been established longest, and have aided in developing a skilled, indigenous work force are those which can be counted among our most reliable friends in a rapidly changing world. The higher the level of well-being and prosperity in a nation, the more likely it is to identify itself and its future with the Western, free world. The Peace Corps, if it fulfills its objectives, can help achieve this goal; American business can aid immeasurably in the challenge of guaranteeing that achievement.

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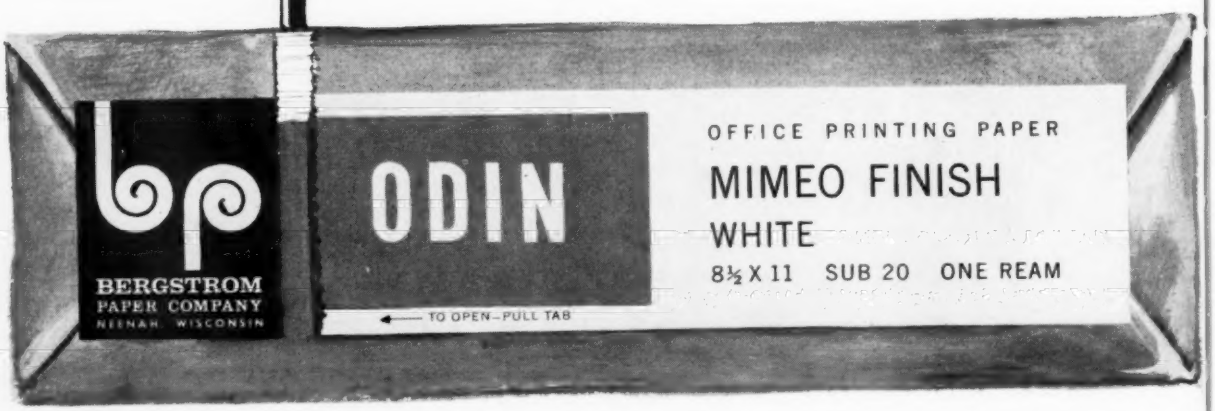

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THE PERSONNEL PARADOX:- PEOPLE SEEK JOBS WHILE JOBS SEEK PEOPLE

New characteristics needed pose recruitment problem

By ROBERT M. SMITH

THE OLD controversy over the effects of automation on the employment picture has flared again with a preliminary report by Rep. Elmer J. Holland (D-Pa.), for the House Committee on Education and Labor, in which he asserted that:

In the steel industry, a quarter of a million workers are accomplishing the same amount of work that required a half-million 12 years ago.

Railroads, over a 20-year period, eliminated a million jobs through mechanization and automated equipment.

Oil refineries, perhaps the most dramatic example of all, boosted capacity more than 50 per cent while simultaneously eliminating 10,000 production jobs.

In addition, Mr. Holland reported, office automation has eliminated one-quarter of the clerical jobs in American companies within a five-year period, and can be expected to reduce job openings by another 4 million within the next five years.

Mr. Holland's figures, even for industrial jobs, are, to say the least, subject to question. His basic source of information was statistics assembled by labor unions. In the case of clerical jobs, which obviously are not heavily unionized, his estimates are even more unreliable.

The reaction to the report was swift. The source of the figures on production workers was questioned; the very flimsy basis for the figures on clerical employment, which obviously were wrong in terms of the past, was pointed out.

Workers perfectly acceptable in yesterday's office or factory may not qualify at all for tomorrow's jobs.

The good programmer must have innate qualities as well as imposed skills

However, the conclusion drawn by too many commentators, that automation will automatically create more clerical jobs, seems almost as fanciful as Congressman Holland's report. If the Congressman was indulging in viewing with much too much alarm, particularly as far as clerical employment is concerned, certainly those who would rebut his arguments can be accused of going in for wishful thinking of the most damaging kind.

Office automation must, in the short run at least, certainly cut down on the growth *rate* of clerical employment. It may not cut down the absolute total of clerical jobs available; if business expansion outpaces increases in operating efficiency, the chances are that total clerical employment figures will continue to rise. But if business should hold at a static figure, it seems quite obvious that the development of more and more effective machines will have as a certain result an overall drop in the number of clerical workers needed to staff the country's offices.

After all, one of the great arguments for an electronic installation—not the only one, but certainly one of the most persuasive—is that it can do a great deal of work faster than humans can. The larger the machine, the more human workers it can replace. Certainly it takes people to program and run the machine, but the number needed is remarkably level, no matter what the size of the electronic unit.

One of the sources refuting Congressman Holland's figures points out that, according to the Bureau of Labor Statistics, clerical employment in this country rose from a figure of 8.5 million in 1955 to 9.7 million in 1960—the same five year period in which the Congressman reported that the number of clerical jobs declined by one-quarter. Obviously, the Congressman was wrong in this instance. But the conclusion drawn —that automation created new jobs, is not entirely valid either. The 9.7 million figure represents a 13 per cent increase over the 1955 figure. During the same period, gross national product rose at a rate of 2.5 per cent a year. Thus, during a period when the office was being called upon to do more jobs, of greater variety than ever before, the total increase in the number of clerical workers just about kept pace with the increasing output of American industry.

Educational requirements will be higher . . .

Period saw much duplication

And this period was actually the time when automation, at least in the form of electronic data processing machines, was just being introduced into American offices. Many of these, not fully realizing the implications of the new techniques, installed machines on top of existing systems, rather than redesigning the systems to make the most effective use of the new machines. Thus, in many cases there was unnecessary duplication of work.

And finally, the period quoted was an era in which a great deal was said about electronic computers, but in which only a relatively few companies installed the data processors until 1958-1960.

With growing sophistication in the use of computers, and much improved machines, it seems very probable that the first sharp impact of computers on the clerical job market will be felt in the sixties. Congressman Holland's estimate of the elimination of four million jobs certainly is an unduly pessimistic guess, but any statement that computers *per se* will increase the number of clerical workers is also clearly erroneous.

The total number of clerical workers may well increase because of an enormously increased rate of production, and thus a much heavier workload on the administrative functions. It may well increase because one of the effects of office automation is to draw traditionally autonomous functions—sales, production, forecasting, market research—to a certain extent under the shadow of the main data processing facility.

But the idea that the machines will, all other things being equal, lead to the creation of more clerical jobs—to a relative increase in the clerical work force as well as an absolute increase—seems clearly unwarranted. It also seems a clear indictment of the good sense of American businessmen, most of whom are reluctant to install a computer until they have some clear indication it can at least pay for itself in terms of taking over various routine data processing jobs within the company. The only way in which a computer can do this is either by eliminating existing jobs, or making

it unnecessary to expand the clerical force to meet a constantly expanding work load.

The fact that a computer gives business management many new capabilities, much better operating information than it has had in the past, is also quite true, but few companies are willing to install a data processor on this basis alone. There must be a fairly immediate pay-off as well as a long-term one. This pay-off period has been estimated by John Diebold, president of John Diebold Associates, Automation and Management Consultants, as five years or less in the average American company.

Computers do create jobs to replace the ones they eliminate, it is perfectly true. But here is where the paradox occurs. The jobs created are so very different in content from the ones eliminated that it is dubious whether the same type of people can do them.

There is a shortage of trained programmers for electronic data processing systems right now, and perhaps will be for years to come. Although still in comparative infancy, automatic programming techniques will probably eventually be simplified to the point where a carefully selected office worker can be trained as a good programmer for his or her own company within a matter of a few weeks. The catch is "careful selection." The same capabilities that might make a girl a perfectly acceptable typist or a man a perfectly acceptable accountant are not necessarily going to make either one an acceptable programmer.

Programmer's qualities defined

An innate quality rather than merely an imposed skill is required of the good programmer, an ability to see cause and result clearly, and to construct a logical sequence of instructions simple enough for the computer to understand and act on, and yet complete and detailed enough so that the machine cannot make a mistake.

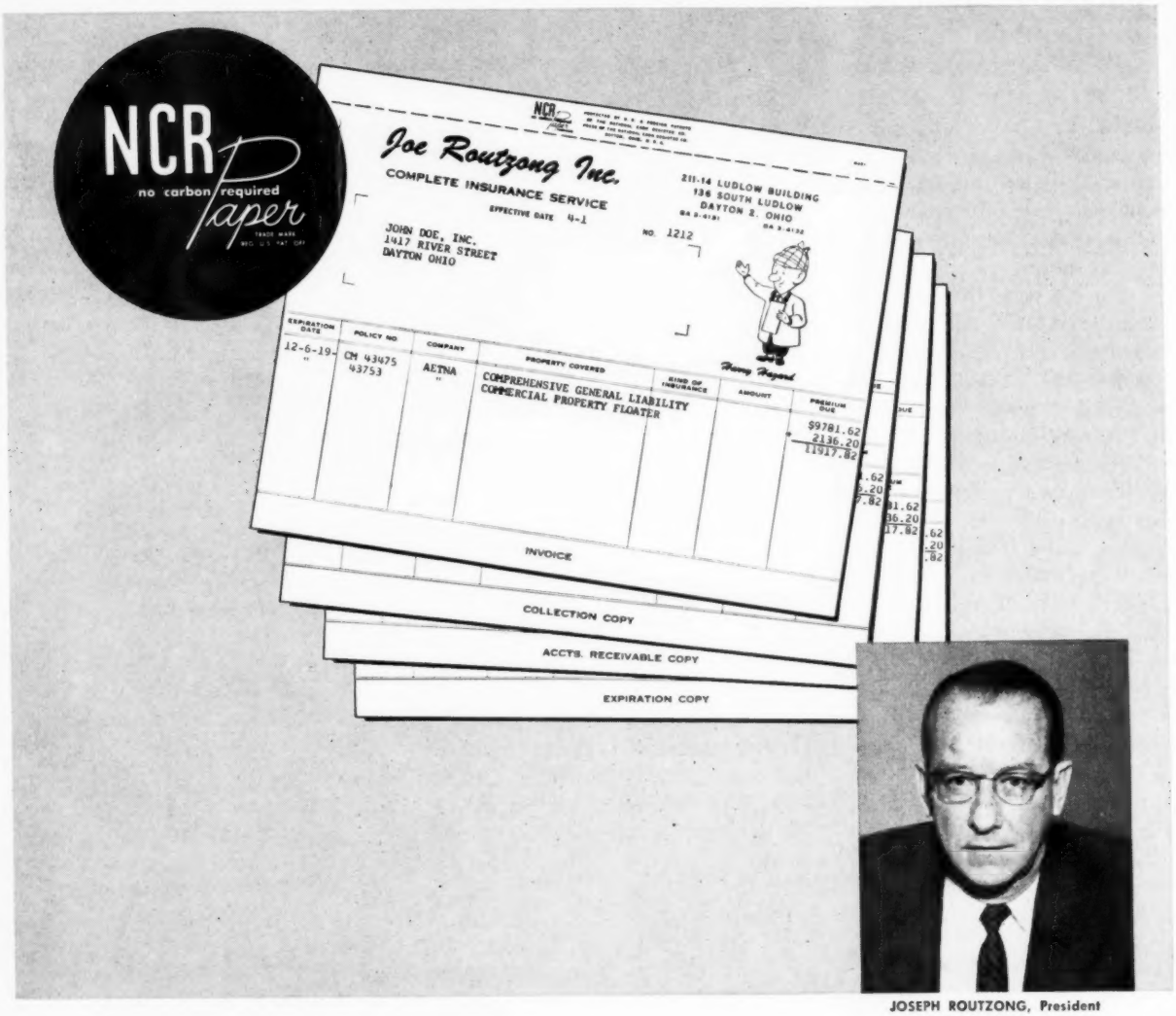
Life magazine, in a recent article on electronic data processing, defined the qualifications needed:

"A good programmer is said to need a special type of personality: extremely logical, intelligent in abstract matters, and usually fascinated by word and number puzzles."

Hardly a description of the average office worker, or, for that matter, of the average person anywhere. As automatic programming becomes more and more flexible, the need for these qualities will diminish, but it will never disappear completely. A person, even using simple English, cannot give good directions to another entity—be it human or machine—unless he or she can think logically, and knows precisely how the job should be done.

And programming is one of the simpler jobs connected with a computer installation. (*To page* 17)

. . . and women will probably assume a much more prominent role.



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A high degree of judgment will be needed

There lies the personnel paradox—a paradox that is already very important in manufacturing industries, where unemployment is at a ten-year high, but mainly among unskilled and semi-skilled workers, while skilled technicians are in short supply. We can expect to see more and more of this type of paradox within our offices unless the workload grows so fast that both conventional methods and electronic data processing routines will be strained.

What will these changes mean to the office—the administrative center of the company?

They will probably mean a much more specialized office staff, at every level, than is necessary today. Jobs will probably be less monotonous and routine as the computers take over most of the mechanical processing functions. But a fairly high degree of specialization will be needed in most of the surviving jobs, and a high degree of judgment as well. The one thing computers cannot do well at all is handle exceptions. These are for humans. But the handling of exceptions demands more of the worker than following a set pattern: it demands human judgment, intelligence, and knowledge. It is doubtful if the worker who is acceptable in today's office at some perfectly routine job will be able to meet the minimum standards of tomorrow's concern.

These changes will probably lead to a far larger number of women in the middle technical roles. Already a surprising number of women—surprising from the traditional business viewpoint that is — have assumed a leading role in automation, both in the electronics manufacturing companies, and in the running of installations. Women seem to have particularly good abilities as programmers. For a programmer, after all, as contrasted with a machine designer, is basically working in communicating with the machine—and this demands linguistic logic rather than mathematical logic. Women have traditionally excelled in the study and understanding of the inner logic of languages, as men have in the logic of mathematics. Mathematical logic is most important in the design of a computer; linguistic logic is most important in instructing it.

But at present there are comparatively few people who are highly trained in either mathematics or language structure, and the trends in secondary school education in the last twenty years have, if anything, played down these classic disciplines. So again, we face a comparative shortage of potential employees with the important skills tomorrow's office will demand, even though there seems a good possibility we will have more job applicants than there are clerical jobs, as more and more students pour out of the schools.

These are all grounds for serious thinking about revisions in the personnel selection and training functions within the office.

If an electronic data processing installation is planned, should traditional testing and selecting procedures be reviewed to ensure the building of a cadre of the type of workers the office, three years after the installation is running smoothly, is most apt to need? It would seem wise.

Should tests be devised to identify the individuals among the present staff who would seem best adapted to learning electronic techniques long before the computer installation is completed. Again it would seem to be wise; many companies have found it so.

But perhaps most of all, those responsible for selection and training of clerical employees should not permit themselves to be stampeded in either direction by wild scares on the one hand, or by soothing assurances that all will be more or less as it always has been, on the other. The elimination of four million clerical jobs in the next decade is a very remote possibility; the chance that there will be far more applicants for office jobs than there will be jobs to fill, and that the individual qualities needed for office workers will be entirely different, and much more difficult to secure, is not.

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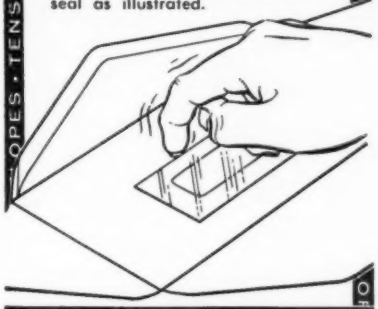

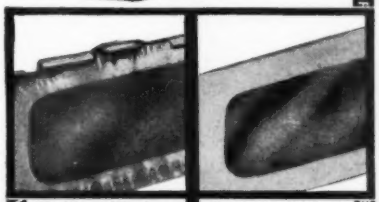

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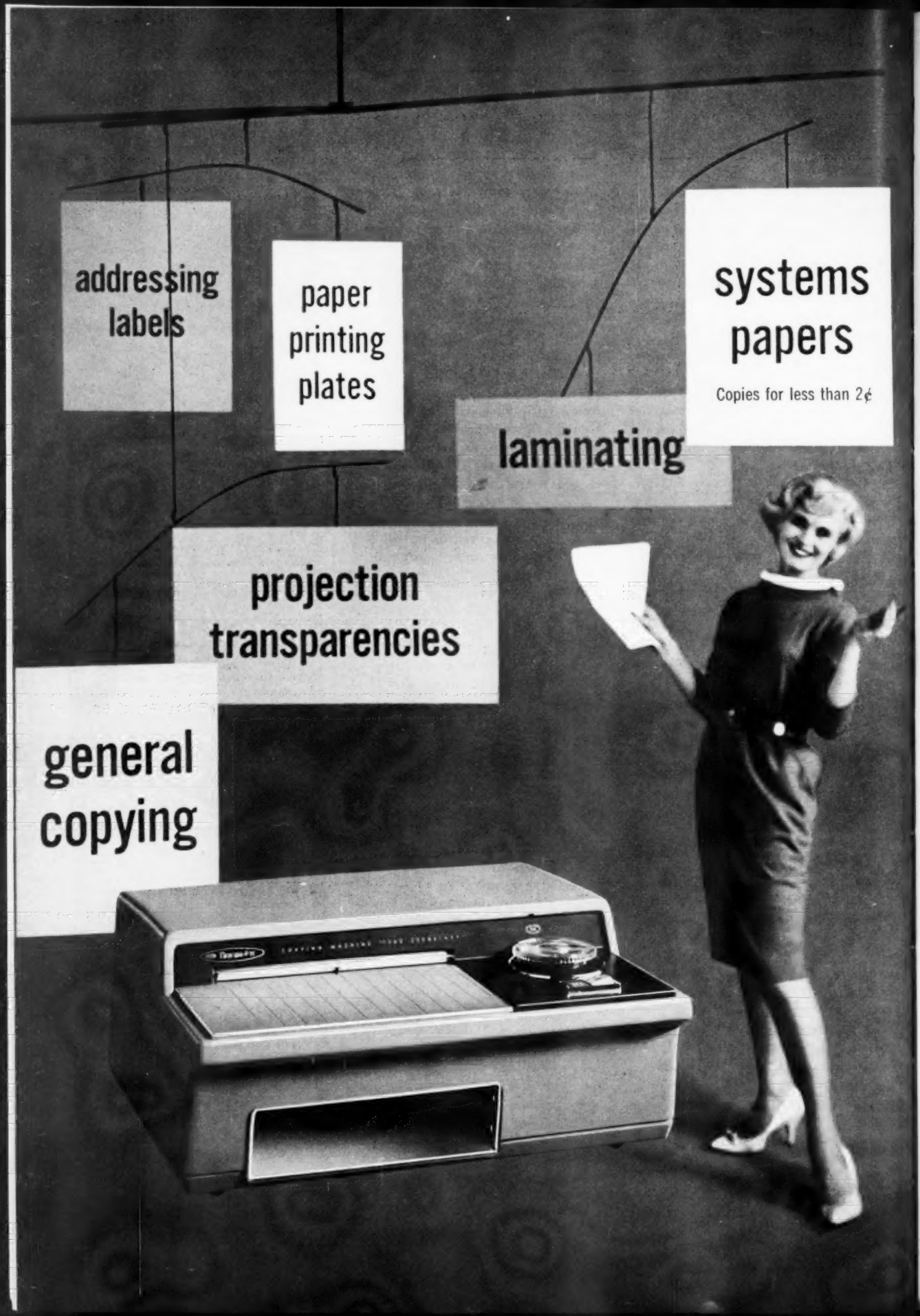
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Part one—

AMA ELECTRONICS CONFERENCE SPEAKERS CALL FOR "TOTAL INFORMATION SYSTEMS"

Top executives talked data processing . . .

ELECTRONIC data processing equipment and high-speed information retrieval systems will become the key elements in control of all phases of business during the sixties, speakers declared at the 7th Annual Electronics Conference of the American Management Association, held in New York, March 6-8.

Almost simultaneously, two speakers at other points made much the same prediction. Bruce Oldfield, chairman of the 1961 Eastern Joint Computer Conference, speaking in Washington, announced that the conference theme this year will be "Computers–Key to Total Systems Control." Gilbert E. Jones, president of the Data Processing Division of IBM, reported that computers will supplement their historic data-processing role by "turning more and more to the job of helping management plan and control a business."

The basic point that computers will gradually assume more and more of the total information needs of a business was made by speaker after speaker at the New York conference, held at the Statler-Hilton Hotel. Sample quotes:

"The manager these days must endeavor to forecast the future and predict the priorities of tomorrow. This situation suggests the need for an 'intellectual radar' that probes beyond the horizon shrouded by the shadow of today's sun. Fortunately, this intellectual radar exists today. Unfortunately, we have not yet exploited its real potential. We refer to it as automatic data processing equipment." – *Edmund D. Dwyer, Chief, Navy Management Office.*

"In our opinion, the mere acquisition of a computer is fast losing its competitive advantage, and in the future the competitive edge is going to the company which figures out how best to use the capabilities of the computer in the management of its business."–*E. D. Jones, Director of Systems Research & Electronic Equipment, Nationwide Insurance Companies.*

"The scope of this concept [integrated management information systems] involves not only operational automation of data handling for product movements, but also total company information systems. By introducing source information in a self-perpetuating manner, closing reports become a by-product of company-wide systematic data processing. Operating reports for all organizational levels are also a by-product of the system. Machines used at each stage of processing are integrated with other equipment involved. The communication system is likewise integrated with all other equipment. The schedule of steps and timing of processes are equated to the speeds of the equipment used." – *J. W. Haslett, Manager, Methods and Procedures Department, Shell Oil Co.*

"Management myopia"

"The challenge to improve our management has never been more difficult than in these times of terrifying technological expansion," Edmund Dwyer, the first speaker on the opening morning of the conference, told its 620 registrants. "Success in our efforts has never been more vitally necessary than in the current climate of continuous crisis.

"Our objective this morning will be to discuss the concept and predominant aspects of what people call 'Management Information Systems.' We will attempt to define the meaning of that phrase and to bring all the essential elements for planning and developing such systems into focus. In doing this, I don't propose to deal with existing

management frameworks; rather, I would seek to engender a new management frame of mind."

Too many companies today suffer from "management myopia," he continued, characterized by no vision at worst and, at best, only hindsight. Even more insidious is another disease – "management measles."

"Management measles is characterized by a lack of timely, accurate and complete data for valid decision making," Mr. Dwyer reported. "This deficiency is readily diagnosed by the presence of the rash—the rash, unformed, impetuous decision. Fortunately, there is a miracle drug available. We call it management information. The lack of complete and pertinent management information can have catastrophic results in these troubled times wherein an economy of priorities and a multitude of agonizing choices are the rule rather than the exception."

Information serves both as the basis and result of every executive action, Mr. Dwyer reminded the audience. The more complete and the more timely the information, the better the possibility of a sound and prudent decision. Moreover, current information alone isn't enough – it must be the basis of reasonably accurate forecasts of the future.

"Automated data processing, harnessed to the tools of the mathematical sciences and operations research techniques, is complex management's potential salvation," the speaker went on. "It's high time we shifted our informational radar from the reactive to the predictive mood."

Basically, there are only two possible approaches to automated data processing, the Navy official stated. "We can direct our attention to improving the administrative efficiency of our data processing system by effecting a substitution of hardware, or we can set out to improve the effectiveness of our management information systems by a re-evaluation of our information needs."

There is a vital distinction between these two approaches, he contended. Efficiency of a data processing system can be evaluated only after it is installed and operating. Conversely, the value of improvements in the effectiveness of management information systems can and must be evaluated before the system is redesigned.

"In brief, if your objective is an improved management information system, then it is vitally necessary that you clearly determine in advance a very precise answer to the question–'Why ADP at all? What is the management information system *need* that I'm seeking to fill?' "

Data can waste time

Information for its own sake can be a waste of time and effort, he declared. It has meaning only in relation to other accumulated information and plans.

"The main point here is precisely that—information is management information only to the extent the manager needs or wants it. It is significant to him only in terms of its relation to his accumulation of relevant prior knowledge and plans, and his personal action responsibility.

"To state it most succinctly, the merit of a data processing system is a function of its orientation to and integration with the overall organization and the overall management information system."

The theme of data processing as a guide to all departments of a business was carried forward by Alfred J. Apgar, Clark Equipment Co., one of the first two afternoon speakers on Monday. Defining the four major functions of a manufacturing company as sales, procurement, engineering, and manufacturing, Mr. Apgar stated the major problem in establishing an orderly management information system was getting the pertinent information from each of these areas into the overall system.

"I believe that before we can start thinking of designing systems that will enable us to manage the overall business, it is necessary first to advise, orient and educate those people, particularly at mid-management level, who are going to be responsible for using this information," he declared. "It is necessary that they completely understand how their functions will influence and how they will affect all of the other aspects of the business. In other words, show them how their decisions affect the overall dynamics of the business; sell this oneness principle."

No better way of achieving at least a recognition of the need for such re-orientation exists than the use of management games, he continued.

"One of the participants in a

. . . to 620 conference participants.

Throwing all data "into pot" precludes secrets between managers

game with me about a year ago was a sales manager," he said. "From his point of view, one of the most important things was saturating the market place with coverage. As a result he completely overhired on salesmen, he built stock inventories to a point that nearly tied up all of the operating capital of the business, and within quite a short time the business was bankrupt. You find this to be true with some professional people on a line functional level. For example, a chief engineer might be influenced to spend more than would be either economically or practically sound in research and development. He might choose to put too much emphasis on physical testing of an end product or upon tolerances of a product so that he might thereby cost the company out of the market place.

"These are all of the things, of course, which it's necessary for each line man of major functional responsibility to understand. He needs to know what profit influence his decisions make.

"When I think of the overall systems information concept, my thoughts turn to a very real trend of a one-time capture of information from all phases of the business into a randomly accessible file that may be accessed for bits of information at any time, or that can be 'requested' to formulate reports as a part of an overall, established executive routine. By throwing all the information into the pot, so to speak, making it accessible to all the other functional persons who run the business, this, of course, precludes any secrets between managers and, as a result, will point out the need for careful decisions—and the weighing of decisions before they are made – because of profit cross effects."

Sales, production correlated

Illustrating how such a system might work, Mr. Apgar described what some companies are already doing to tie sales information directly into a total management information system.

"Sales orders are sent over data phone or leased teletype lines and received at the manufacturing or supplying end in a form that will allow the receiving point to prepare the paper work necessary to manufacture the item or withdraw it from stock with a minimum of duplication of effort. One company that I know of has its customers order directly from their location into a computer at a remote point; the computer has a self-editing set-up so that it knows the order is valid. In effect, the customer inserts a plate into a device which identifies him as a valid customer, and this gives him recognition for the order. From that point on, the supplier's inventory is depleted, the order is prepared for shipment, and the customer is invoiced on the customer's own say-so. I think this approach is coming for more of us."

As far as procurement is concerned in a manufacturing operation, it is possible to take the sales forecast, explode it or multiply it (depending on whether the sales department has been too optimistic or pessimistic) by the bills of materials of all the parts required to make each product, subtract inventories on hand from the results, and arrive at a realistic estimate of the amounts of detail parts to make or buy in the most economic lot sizes, he declared.

Exploring further the possibilities of an automatic system, Mr. Apgar said:

"When the invoices come into the company for payment, these in turn are electronically matched against the purchase record, or initial vendor release record which was generated by the sales forecast, and also matched against receiving evidence to show that the merchandise had been received intact and in the right amount and for the right price. After this validity check the invoices are automatically paid, only the exception detail being sent to the purchasing function."

Of the manufacturing function, the speaker declared:

"This, of course, is where the greatest need for getting the mass volume of data into a usable file rapidly is the most necessary. Many companies are experimenting with different types of shop reporting of time, of inventories, of inventory movements. The basic manufacturing orders are generated as a result of the bill of materials explosion

Major electronics firms displayed data processing equipment to conferees.

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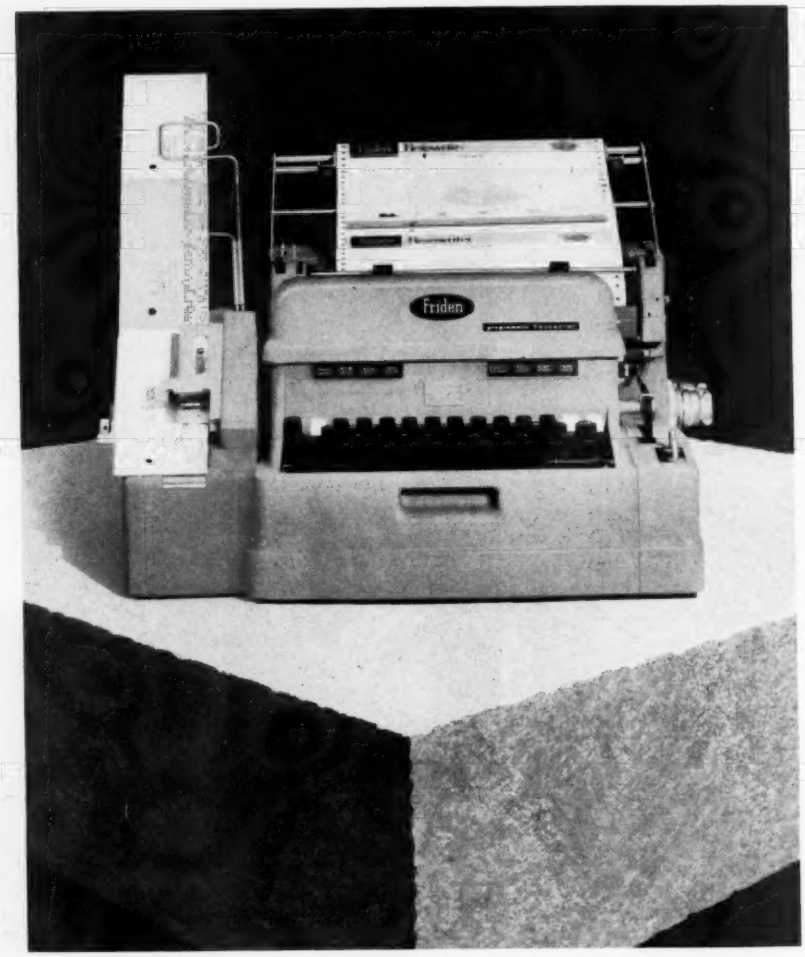

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SALES, SERVICE AND INSTRUCTION THROUGHOUT THE U. S. AND WORLD

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Electronics for profit

which I had mentioned in the procurement function. But the real bugaboo is in scheduling and planning a job shop, and there are, as far as manufacturing businesses are concerned, a greater number of so-called job shop operations than any other type in the manufacturing industry; getting job shop departments planned or scheduled to an optimum basis, with answers to what machine tools jobs should be run on, and how many should be run to optimize profit. I know of two large companies in the country which are pioneering the optimum scheduling phase of job shop industry planning or job shop manufacturing planning, using large scale electronic data processing systems.

Close feedback required

"Then, in accordance with this scheduling phase, of course, it's necessary that planning people get close feedback of all the movement in the shop so that they can better handle exceptions to the optimum schedule. Along this line, as far as reporting time from the individual operators and inventory movement, there are a number of different devices which have been used with some degree of success. Some companies have chosen to have operators walk to inter-communications systems, pick up a telephone and report their time to a central time-keeping unit, and in that location, the time is then put into some kind of a data processing medium. Other systems use employee identification tags and the injection of variable information to a central point. I think by far the most sophisticated to date is that of microswitching machine tools directly into the memory system or central file system of a computer and at this time updating all inventory status media, calculating the individual operator's pay and redistributing this pay for accounting and management control purposes. This is the area in which we are primarily interested, this area of having up-to-the-minute information which will allow us to find the sore spots and be able to solve them before our profit picture gets hurt substantially."

(To be concluded)

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These award-winning offices represent American business's successful quest for functional, aesthetically pleasing space to house its administrative operations. To this end, each of the six winners has made a contribution to the field of office design.

Complete stories on each of the offices, together with illustrations of all their facets, will appear in next month's issue of this magazine, the first issue to appear under the new name *Administrative Management*.

Office of the Year (for offices designed for 300 or more employees): Union Carbide Corp., New York.

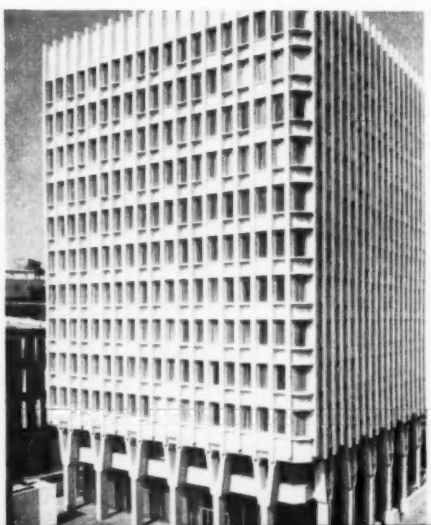
Office of the Year (for offices designed for up to 300 employees): Atlantic City Electric Co., Atlantic City, N. J.

Award of Merit (for offices designed for up to 300 employees): Standard Rate & Data Service, Inc., Skokie, Ill.

Award of Merit (for offices designed for up to 300 employees): Parke, Davis & Co., Ann Arbor, Michigan.

Award of Merit (for offices designed for 300 or more employees): Kaiser Industries, Inc., Oakland, California.

Award of Merit (for offices designed for 300 or more employees): Blue Cross - Blue Shield, Boston, Mass.



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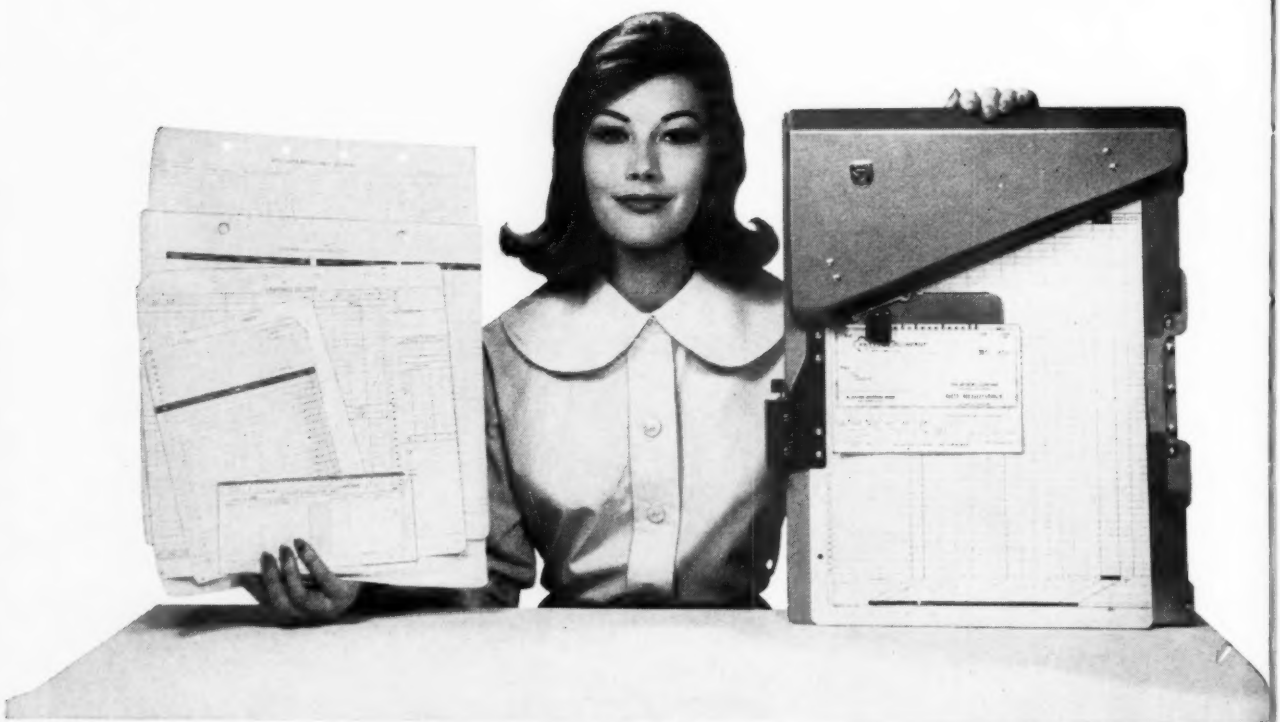

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On the basis of Los Angeles turnout, OEMI officials predict crowd of 60,000 at Coliseum.

OEMI SHOW COMES TO NEW YORK

Displays of office equipment and supplies scheduled for April 17-21

THE PERIPATETIC Business Equipment Exposition, after playing to packed houses in Washington and Los Angeles, opens in New York for a five-day stand on April 17.

Cast for the extravaganza consists of more than 70 leading manufacturers — both foreign and domestic —of business machines, equipment and related supplies. While computers from the giants in the electronic data processing industry — Burroughs, IBM, National Cash Register, Philco, Remington Rand Univac, and others — will play the starring roles, a large supporting cast of peripheral equipment will be much in evidence. Estimated value of the products to be displayed exceeds $30 million.

Two floors of the New York Coliseum, with about three and one-half acres of display area, will be the scene of the exposition. Officials of Office Equipment Manufacturers Exhibits, Inc., a subsidiary of the Office Equipment Manufacturers Institute, anticipate an audience of 60,000 executives. Tickets are now being distributed by exhibitors, and additional tickets are available from the OEMI headquarters at 777 14th St., N.W., Washington, D. C.

The exposition will be the first New York show in which a large segment of the major office equipment manufacturers has been represented since 1956. Many of the products have not been displayed before in the New York market. The exposition will run each day until 10 p.m. and end on April 21.

Brief opening ceremonies are scheduled for 1 p.m., Monday, April 17. Lloyd M. Powell, president of OEMI and of Dictaphone Corp., will stress the exposition's theme, "Serving America's Growth," in the ceremonies.

This theme, according to a prepared statement by Mr. Powell, "is an effort on the part of the industry to remind business people of the parallel between the growth of industrial America and the progress within the office equipment industry."

In his statement, Mr. Powell also traced the role of office equipment in American business: "In a progressive nation, industrial management is constantly alert for the

techniques and tools to more effectively produce those items of greatest value to the consumer. They have long recognized that the nerve center of all business and government is the office, and that the effective office immeasurably contributes to the effective company. The role of the office equipment industry is to provide the finest possible products for the vital office operation, and The Business Equipment Exposition is the stage upon which we make our presentation.

"Of significant importance," Mr. Powell continued, "is the overall contribution the office equipment industry makes to the nation as a whole. Advancements in mechanization in the industry's products have not only effectively refined business operations, but have added materially to the welfare of the office worker. With high-speed equipment, routine operations no longer become tedious bottlenecks — thus freeing people for more involved and valuable business studies and operations. This contributes to a more effective work force and creates wider employment oportunities. For instance, in 1955, according to U.S. Government statistics, there were 8,367,000 Americans working in clerical, or similar, jobs. By the end of November 1960, business growth had swelled this work force to 9,798,000 — or 1,431,000 more Americans working in business offices than there were a scant six years ago. This represents about a 17 per cent employment rise during a period of great investment in mechanization of office procedures by business firms.

"Just as one might consider the introduction of the typewriting machine, around the turn of the century, as the harbinger of office mechanization, so too, perhaps, the multitude of electric, electronic, and high-speed devices at the 1961 presentation of The Business Equipment Exposition may herald an even more significant advance in business operations. Historically, the need and the solution have been virtually simultaneous in the product presentation of the office equipment industry."

The next presentation of the exposition is scheduled for Chicago's new lake front exhibition hall, McCormick Place, April 9-13, 1962.

BUSINESS EQUIPMENT

Acme Visible **N-1**

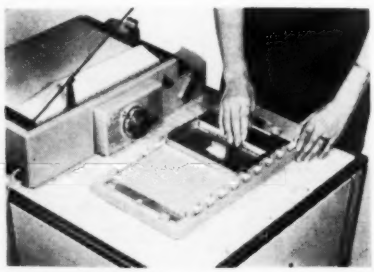
Rotary files, in several sizes and either manually operated or motor driven, bring records within reach. Systems handle edge-punched cards and tapes for use with data processing. Acme Visible Records, Inc., Crozet, Va.

Bankers Box **N-2**

Staxonsteel files (shown here from an installation at Wilson Sporting Goods Co., River Grove, Ill.) permit low-cost storage of inactive and partially active records. Bankers Box Co., 2607 N. 25th Ave., Franklin Park, Ill.

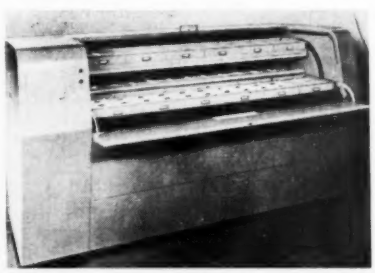
Diebold **N-6**

Diebold open shelf power files, vertical storage files, and vertical processing card trays will be part of display. Newest in the line are the open shelf units, which feature push-button operation. Diebold, Inc., Canton 2, Ohio.



Eastman Kodak **N-7**

Addition to Verifax family is the tabulating card shingling unit that fans out 34 tabulating cards for copying on a single sheet of paper. The unit is used with the Verifax Signet copier. Eastman Kodak Co., Rochester 4, N.Y.



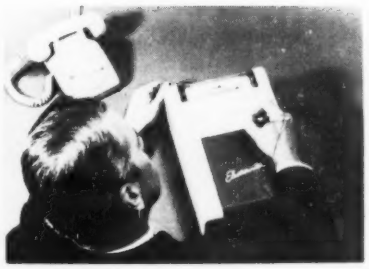
Mosler **N-11**

New high-volume rotary card file, called Selectronic Record File, can house any size card. Instant access is available to 750,000 cards. File is controlled from master keyboard. Mosler Safe Co., 320 Fifth Ave., New York 1.

National Cash **N-12**

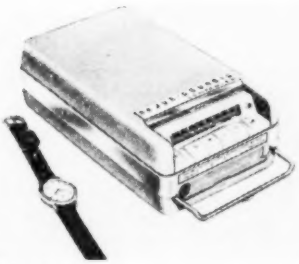
Compu-Tronic, new electronic accounting machine, combines functions of calculator, adding machine and accounting machine. Up to 31 electronic memory units are available. The National Cash Register Co., Dayton 9, Ohio.

TO BE SHOWN AT THE NEW YORK EXPOSITION



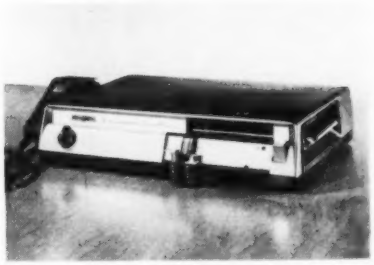
Comptometer **N-3**

Electrowriter instruments transmit written messages or sketches to any point over telephone and radio circuits. Instruments are self-contained and completely transistorized. Comptometer Corp., 5600 Jarvis Ave., Chicago 48.



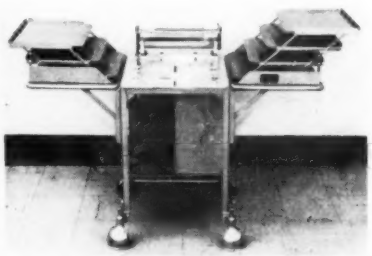
DeJur-Amsco **N-4**

Stenorette Companion, new self-powered dictating machine, is no larger than medium-sized book. Fully transistorized, it offers 45 minutes of dictation and costs $199.50. DeJur-Amsco Corp., 45-01 Northern Blvd., Long Island City 1, N. Y.



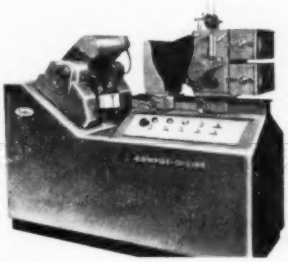
Dictaphone **N-5**

New Time-Master touch-button dictating machine is lightweight and has transistorized amplifier. Company also has entered field of facsimile transmission and recording. Dictaphone Corp., 420 Lexington Ave., New York 17.



Farrington **N-8**

The Tippette, a carbon interleaved snap-out formsmaking machine, handles work up to 11 by 14 inches. An operator can perform 2,000 pick-ups an hour. Newest product of Farrington Business Machines Corp., Needham Heights 94, Mass.



Friden **N-9**

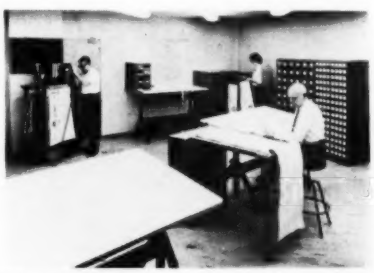
Friden Compos-O-Line photographically reproduces images from other documents at speeds up to 7,200 exposures an hour. Used for catalogs, directories, label addressing, etc., it is available from Friden, Inc., San Leandro, Calif.

Gates **N-10**

The IDP-100 Acoustinet is a new acoustical unit that absorbs the noise of key punches, verifiers, and other equipment before it carries into the office. Gates Acoustinet, Inc., 2690 Sheridan Drive, Tonawanda, N. Y.

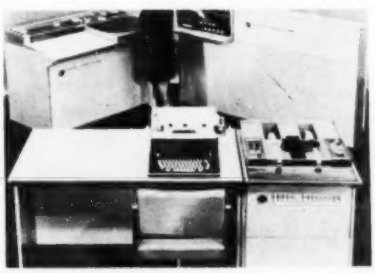
Philco **N-13**

Model 212 central processor has two-microsecond memory, linear selection, and core storage. Four-way processing is possible because the computer is partitioned into four units. Philco Corp., 3900 Welsh Rd., Willow Grove, Pa.



Plan Hold **N-14**

Vertical and roll file units permit systematic filing of plans, prints, drawings, etc. Rolling stand with data file is at left, table mounted stack roll files, in center. Plan Hold Corp., 5204 Chakemco St., South Gate, Calif.



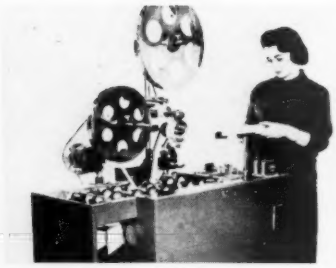
Royal McBee **N-15**

RPC-9000 computer system accepts data in random order and automatically updates all affected records in an uninterrupted sequence of operations. Basic system is priced at $122,000. Royal McBee Corp., Port Chester, N. Y.

EQUIPMENT AT THE NEW YORK EXPOSITION

Savin **N-16**

Photocopier copies from two sides of a page onto two sides of ordinary paper, and copies colors and ballpoint pen impressions. Electrostatic process is used. Savin Business Machine Corp., 161 Sixth Ave., New York.

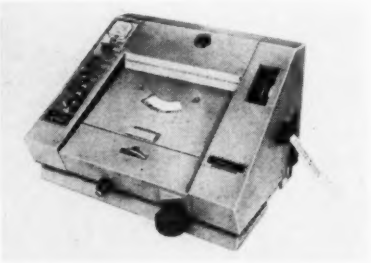


Scriptomatic **N-17**

Model 301-S is a high-speed machine that can write 40,000 addresses an hour, printing from punched card masters to standard mailing tapes. Also to be shown is Model 10-S. Scriptomatic, Inc., 11th and Vine Sts., Philadelphia 7.

Stromberg **N-18**

Display will consist of Transacter data collection system (shown above) and new RC 6000 automatic remote control system to turn on and off electrical equipment. Stromberg Division of General Time Corp., Thomaston, Conn.

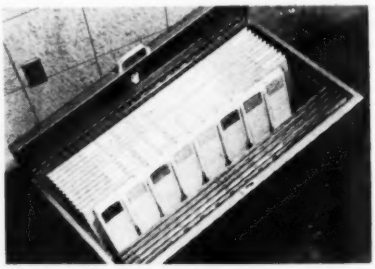


Varityper **N-19**

Headliner photo-composing machines, models 800 and 840, make finished proofs from 35 mm. paper or film. No darkroom is needed. Varityper Corp., subsidiary of Addressograph-Multigraph, 720 Frelinghuysen Ave., Newark 12, N. J.

Victor **N-20**

Punched data processing tape is a by-product of Victor Premier 10-key adding machine. Unit produces five through eight channel tape at rate of 20 characters a second. Victor Adding Machine Co., 3900 N. Rockwell St., Chicago 18.



Visirecord **N-21**

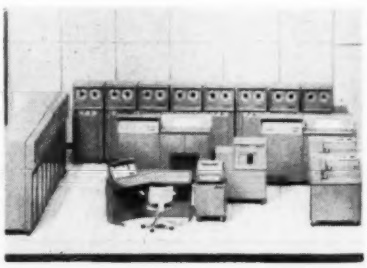
VISIdata line of duo-dimensional card handling equipment for multiple card input to data processing systems will be shown for the first time. System is called "automation's missing link." Visirecord, Inc., Copiague, N. Y.

Wheeldex **N-22**

Motorshelf automatic filing units (shown here at Bache & Co., Wall Street broker) save 40 to 65 per cent of filing floor space, handle regular and legal size files. Wheeldex & Simpla Products, Inc., 100 N. Division St., Peekskill, N. Y.

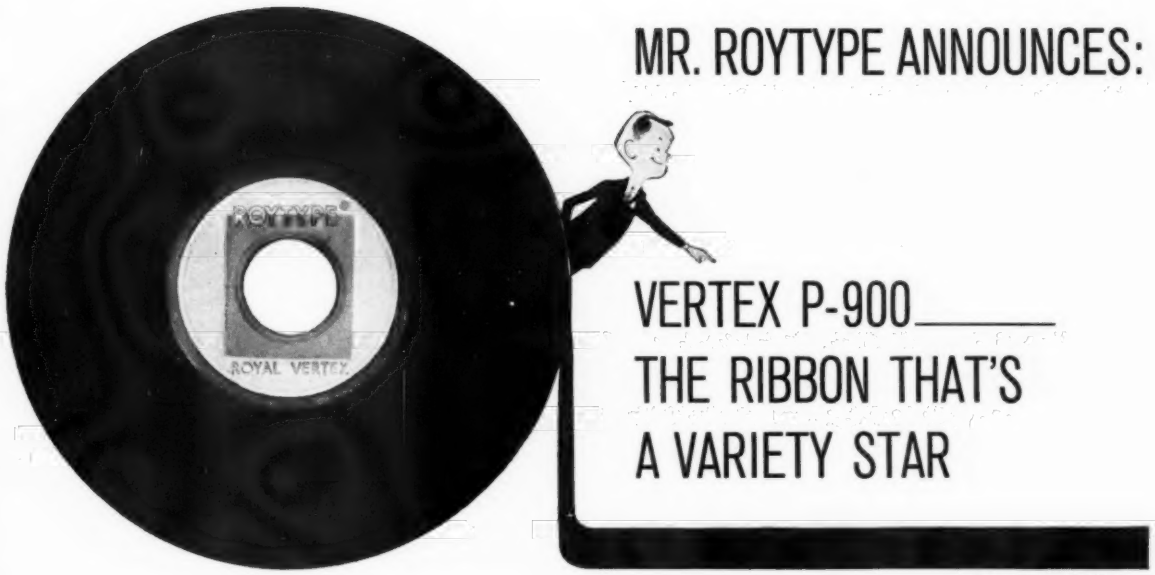
Haloid Xerox **N-23**

Xerox 914 copier, which uses the process of xerography, is described as the first fully automatic office copying machine. Also to be shown are new color techniques in xerography. Haloid Xerox Inc., 6 Haloid St., Rochester 3, N. Y.



Burroughs **N-24**

In addition to models of new B5000 computer system shown above, display will consist of one complete and functioning data processing system, high-speed printer, and new Todd Division products. Burroughs Corp., Detroit 32, Mich.



MR. ROYTYPE ANNOUNCES:

VERTEX P-900——— THE RIBBON THAT'S A VARIETY STAR

© 1961 Royal McBee

VERTEX® P-900 is a proud new product of Mr. Roytype's—a typewriter ribbon that performs a variety of jobs that once took a variety of ribbons to perform. No more changing ribbons for special work! • VERTEX P-900 works equally well on both manual and electric typewriters . . . with either broad or sharp face types. Its one basic coating strength gives clear, clean cut impressions on a whole gamut of applications, including typing on direct image plates for the offset process. • This new carbon ribbon's improved ink formula *equalizes typing impressions.* Whether the key is touched with a heavy hand or a light finger, the results are the same . . . clean, clear, *uniformly* black imprints. • And because VERTEX P-900 is made of Polyethylene, it just doesn't break . . . ever. Ask your office-trained Roytype representative about this grand new ribbon, VERTEX P-900; let him show you how it can simplify your office routines. Let him help you select all your other office supplies, too.

ROYTYPE® *A complete line of business supplies . . . expert help . . . and dependable service, too.*

PRODUCT OF ROYAL McBEE CORPORATION, WORLD'S LARGEST MANUFACTURER OF TYPEWRITERS

(Circle No. 44 on Reader Inquiry Card)

GIFTWARE FIRM LOWERS INVENTORY, IMPROVES SERVICE WITH NEW SYSTEM

Girl pulls Keysort cards from compartmented file (above) as customer orders are received. Royal McBee tabulating punch (below) internally codes dollar and quantity values, and simultaneously prints a tape, accumulates, and summarizes at will.

By G. Z. PATTEN
Executive Vice President
The Hi-Jac Corp.
Chattanooga, Tenn.

ONE OF OUR sales representatives recently surprised a department store buyer by suggesting that the quantity of an item in his order be lowered substantially. The buyer was especially surprised because the item was then selling briskly.

But our representative's advice was based on sound information. With a small data processing system that rents for only $120 a month, The Hi Jac Corp. can predict when an item has reached its peak and is about to diminish in appeal. If our representative had accepted the order for a larger quantity of goods, his customer eventually would have had "mark down" merchandise on his hands. This is no way to make friends among buyers.

With the exception of some "good old standbys," our products are almost as "perishable" as produce. Sales appeal and volume depend upon keeping up with current public whims. So our data processing system, which controls inventory and production, and offers pertinent sales and market analysis, is invaluable not only to us, but to our customers.

This system consists of compartmented tub files that contain Keysort marginally grooved cards for each item in our various lines. On the face of each card is imprinted the title, description, and price. Around the margin such known information as item, group, and design is pre-grooved.

Each day, as orders are received, a girl pulls the proper card from the tub for each item on every

order. She then marginally grooves such known data as salesman, class, department, account number, date, and source of order – regional or national chain, retail or wholesale.

We also can marginally groove our cards as to class of commission, special promotions, and whether the order resulted from a salesman's effort, came direct or from a show. Thus, we can quickly sort the Keysort order analysis cards into any desired classification.

The next processing step makes these Keysort cards automatic instruments. They are run through a tabulating punch which internally codes dollars and quantities by item. As the machine is doing this, it prints detail on a tape, accumulates, and summarizes at will. Later, when the cards are sorted marginally to the desired classification, the same tabulating punch will automatically read, print, accumulate, and summarize the punched values.

System gives close control

This automated system gives us important controls in the fields of inventory and production. Periodically the Keysort cards are marginally sorted to item. Then they are run through the tabulating punch. The result is an automatic summary by quantity and dollars of items shipped. The item number is also printed on the resulting tape by use of a non-add key.

The first use made of this summary is to debit inventory ledger cards. We create one for every item in our various lines. Each card bears both a minimum control and data as to the most economical quantity for a production order. Many of the production orders we issue to our two plants are routine –the result of accumulated orders reducing inventories below preplanned minimums.

But in a volatile business such as giftware, production orders are subject to constant management attention, with minimums being lowered or raised.

How close does management keep to this situation? There is a report on my desk every day. It is an accurate summary of inventory and production orders and includes activity of the day before. Such pinpoint control has reduced our inventory 30 per cent while sales volume has increased. The system also helps our customers. Since we can forecast what they will order, our own inventory is balanced to permit almost immediate shipment. Before inaugurating this system we shipped two to three weeks after receipt of an order. Now it is a rare occasion when an order is not shipped within the week it is recieved.

By use of the poster, debits and credits are posted to inventory ledger cards. One posting simultaneously creates journal and posts entries to the ledger cards.

In addition to the daily report for spot control, the equipment provides a monthly market analysis by type of outlet and a weekly sales analysis report by item. These reports are summarized by salesman, with the representative receiving a copy of the report covering his territory.

The reports are not only by month and by week, but are accumulative for year to date.. By comparing current reports to the same period last year, each salesman has a valuable analysis as to his progress. The reports also contain pertinent management data for effective sales direction.

The system is also flexible. When we consider whether a special report is feasible, the answer is almost always positive. The secret is that once the dollars and quantities are internally punched by the tabulating punch, we can then automatically create a great variety of reports by marginal sorting and processing.

Too often in our business early profits on a new item are later lost by overstocking because of inability to judge when it has hit its peak. It is much better to close out an item just before it loses its appeal than after. We are experiencing a constantly reduced factor of distress merchandise. Our customers, of course, are having the same experience with our lines.

In a volatile business such as ours, it is a great comfort to depend on *facts*–not on "guesstimates."

AUTOMATION IN THE OFFICE

TWO-GIRL OFFICE HANDLES MILLION-DOLLAR BUSINESS —WITH AUTOMATION

IMAGINE a company doing more than a million dollars a year in gross business with only two girls and a battery of office equipment. Sound like fantasy? It's not at all. Smith-Wolff hardware importers in New York is doing just that and, moreover, is increasing its business this year at a rate 50 per cent greater than last year, despite the doldrums that have beset the American economy.

Key to the system, explained Gordon Wolff, owner and president of the company, is the latest in automated office equipment. Everything is done to keep down labor costs. The work force consists of Mr. Wolff, a handyman, two bookkeepers, and a girl, who comes in two days a week. The entire operation is confined to 400 square feet of office space on Manhattan's lower Broadway.

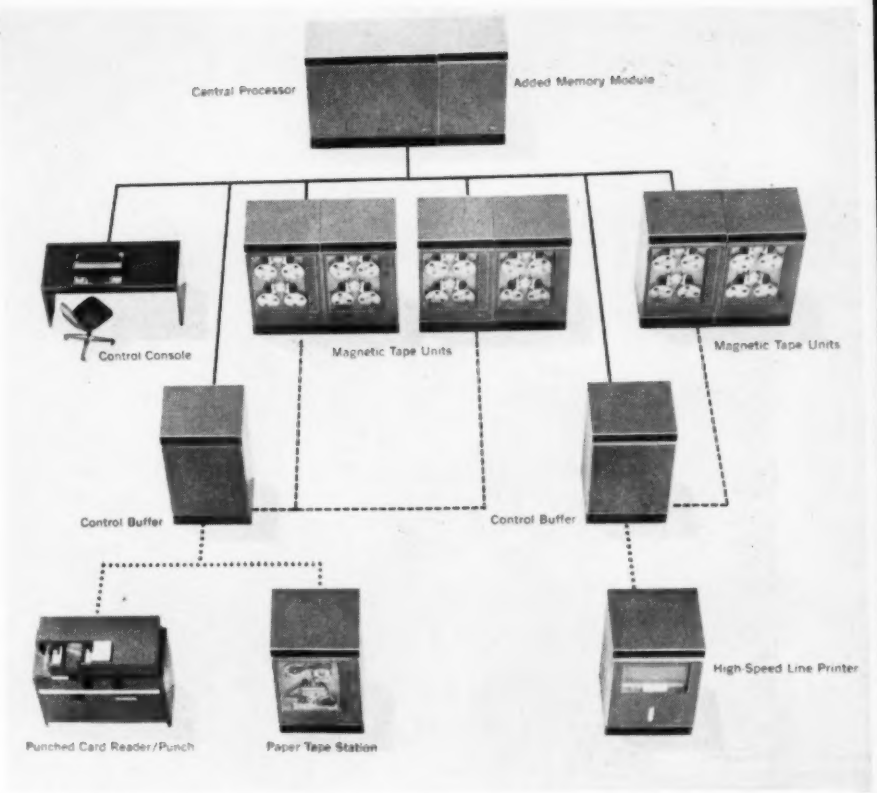
The company has no salesmen since all sales are made by mail or telephone — Mr. Wolff encourages all his customers to call collect for needed merchandise — to 400 hardware jobbers. Every order is shipped the same day it is received. (Smith-Wolff gets about 25 orders a day.) Distribution of the company's 300 items is nation-wide from rented space in warehouses on New York's waterfront.

The office is the entire company: Mr. Wolff, two girls, part-time girl, and general handyman make up labor force of million-dollar-a-year business.

Mr. Wolff is surrounded by company's products in his private office. Firm sells 300 hardware items.

Equipment in this highly automated office includes a Friden Computyper, tub files, three electric typewriters, Thermo-Fax copying machine, Dictaphone dictating machine, Pitney-Bowes electric letter opener and postage meter, Underwood bookkeeping machines, and an electric coffee maker. Investment for this equipment is $25,000, almost half of which is for the Computyper. Overhead costs are kept to an enviable 5 per cent of gross sales.

Orders are processed on the Computyper, and a 10-part form is created. Orders average $1,200 each; invoices are about $900 each due to some back-ordering. Monthly sales analysis is obtained as a by-product of invoicing. By analyzing the activity of 20 pre-determined items, which include "hot numbers," "bread-and-butter items," and "slow numbers," Mr. Wolff gets a good picture of his entire line each month. Merchandise consists primarily of popular priced home owners' tools, and inventory turns over about eight times a year (as compared to a three-time average in the hardware business). From the financial records produced, an outside accountant makes up the monthly balance sheet and profit and loss statement.



High-density recording is used in magnetic tape units of this Bendix G-20 computer.

High-density recording increases data capacity

High-density recording, a system of tightly packing digital data on magnetic tape, was demonstrated recently by Potter Instrument Co., Plainview, N. Y. The system will be used for magnetic tape storage in electronic computers and is expected to be adaptable for business use.

First application of Potter's system, however, is the high-speed tape transports to be used in the Bendix G-20 computer destined for installation at Carnegie Institute of Technology, Pittsburgh.

As many as 190 300-page volumes of information can be recorded by the new system on a ten and one-half inch reel of tape, as compared to 17 volumes usually recorded on a reel of magnetic tape. The system provides a high degree of reliability despite data transfer rates as high as 360,000 alpha-numeric characters a second, via 16 parallel recording channels on one-inch tape, and at packing densities up to 1,500 bits per inch.

Father of the system is Potter's chief engineer, Dr. Andrew Gabor, a graduate of the Budapest University of Technology in Hungary. Dr. Gabor, who developed pulse modulated communications at the Research Institute of Communication in Budapest, has been in this country for five years.

Computer has become "tail wagging the dog"—Eppert

"The electronic computer has become 'the tail wagging the dog.' Computers have a definite and invaluable place in the [data] processing picture, but the results secured will largely be determined by the total system requirements . . . the computer itself is no stronger than the weakest link in the system chain."

The author of this manifesto against business's emphasis on electronic computers is, strangely, the president of one of the computer industry's biggest corporations. He is Ray R. Eppert, president of the Burroughs Corp., and his statement was made before a meeting of near-record attendance at the New York Society of Security Analysts.

Mr. Eppert noted that "approximately 15 million business enterprises in the free world . . . in addition to government, need business machines of one kind or another to achieve the efficiency and control essential to a successful operation."

This need, he stated, has been caused by the decreasing profitability of business: "In the decade of the fifties the total of all corporation profits after taxes remained the same although in that period the gross national product increased almost 75 per cent. Stated differently, profit margins have drastically declined [and] management today is working with closer tolerances than ever before. The reserve for management error is less, and consequently there is a much greater need for more complete, current facts about the busi-

WHAT ROLE WILL AUTOMATION PLAY IN YOUR COMPANY'S FUTURE?

OFFICE MANAGEMENT, which pioneered the first reports on Automation in the Office back in 1952, has long since extended its coverage to interpret in depth the role automation is playing in the office, the trends that it has brought about, its implications for every aspect of the office's activities. For definitive reports on what automation means — today and in the future—look to OFFICE MANAGEMENT and AMERICAN BUSINESS, the magazine that puts automation in the correct perspective for alert executives. In addition to its articles in depth on every implication of automation, the magazine reports each month the most important installations and latest developments in the field of equipment.

Here are some typical features on automation in recent issues.

Four input methods are available for using computer service centers.....December

Automation revolution will affect every phase of U. S. economy.....January

As company integration moves forward, sales, transportation, even production, will all be tied together, and the office will run every business activity .....January

New thin-film computer memories multiply data processing speeds .....February

Burroughs new solid state B5000 designed for automatic programming .....March

Office Management and AMERICAN BUSINESS

The Magazine of Administration and Systems

A GEYER-McALLISTER PUBLICATION

212 Fifth Avenue, New York 10, N. Y.

BUSINESS PAPER LEADERSHIP ABP

AUDITED PAID CIRCULATION ABC

ness so that the impact of an action taken or a decision made can, to some extent, be pre-audited."

To illustrate the growth of the data processing industry, Mr. Eppert pointed out that 44 per cent of Burroughs' commercial equipment revenue in 1960 came from products that were not in existence four years ago.

Also, in response to a security analyst's question about the profitability of computer manufacturing, Mr. Eppert stated that since computers are superseded by improved models when they reach the profitable stage, "you can be in the red and in the black at the same time." He explained that his company's 205 and 225 computers are now profitable and that he expects the new B5000 to be profitable for a longer period of time.

In other news of Burroughs, Mr. Eppert announced at the meeting the development of thin film computer memories for commercial sale to the electronics industry. These memory devices, which permit internal processing speeds measured in nanoseconds (billionths of a second), have previously been announced by Remington Rand Univac and Minneapolis Honeywell Regulator Co. Most other computer manufacturers are believed to be working on the devices.

Savings bank installs on-line data processing

The first fully automatic on-line data processing system for savings banks has been designed and built by Teleregister Corp., Stamford, Conn., for the Howard Savings Institution, Newark, N. J. Called the Telefile system, it was demonstrated over long distance circuit from Newark to Boston at a conference of the National Association of Mutual Savings Banks in Boston.

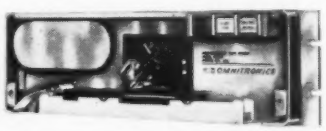
In the demonstration, John J. Feldman, assistant vice president of Howard Savings, inserted a passbook into a "Teller-Register" in Boston and depressed the appropriate buttons. Seconds later, the requested transaction was completed, recorded in the passbook,

and the account brought up to date with information stored at Howard's data processing center in Newark. The Telefile system is currently being installed at Howard and will service all seven branches.

Insurance company to use RCA computer for accounts

Berkshire Life Insurance Co. will expedite handling of information from 41 agencies in 24 states through the use of Radio Corporation of America's 301 data processing system. W. Rankin Furey, president of Berkshire, which was an "Office of the Year" Award of Merit winner in last year's *Office Management and American Business* competition, said that installation of the RCA 301 will be made at the firm's new home office building in Pittsfield, Mass. A data center will be established there.

Mr. Furey commented: "Berkshire is by tradition and choice a conservative organization with an eye to the future. The RCA 301 will be put to work on an increasing scale, initially handling the paperwork of the present, growing as we grow, and helping us to plan more effectively for the years ahead."



Omnitronics tape reader operates on reflected light

A new photo-electric tape reader, incorporating an application of chopped reflected light, has been developed by Omnitronics, Inc., a Borg-Warner subsidiary.

The tape reader, designated Model PTR-7, is applicable where reliable tape reading is required for input to digital computers, communication systems, and tape converters. Since reflected light is used, a better ratio of signal-to-noise is attained in reading translucent tapes. Model PTR-7 will read standard tape widths and up to eight channels and sprocket of strip or continuous loop tape.

Girl spends more

time getting ready to fold—
than the entire folding job
would take on an FH Folding
Machine...which can fold up
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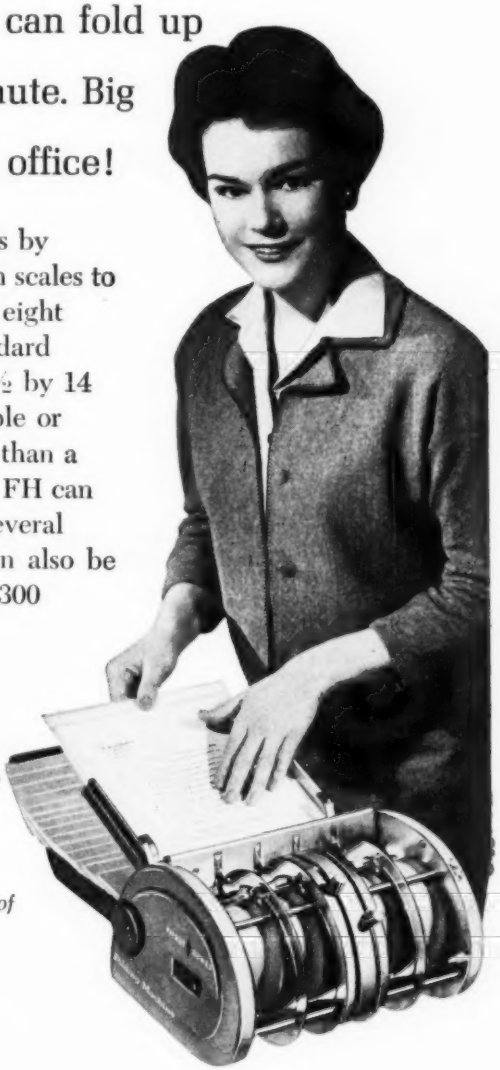
time saver in any office!



An FH is set in seconds by moving two knobs on inch scales to fold sizes wanted. Makes eight basic folds. Takes all standard papers, from 3 by 3 to 8½ by 14 inches. Even folds multiple or stapled sheets. Costs less than a standard typewriter. One FH can save time and work for several departments. The FH can also be attached to PB's Model 3300 Inserting Machine for combined folding and inserting.

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MULTI-PURPOSE INVOICING SPEEDS STEEL COMPANY'S PLANT-OFFICE COMMUNICATIONS

By JAMES W. CHALLENGER
General Manager
Capitol Pipe & Steel Products, Inc.
Philadelphia

INVOICE WRITING at Capitol Pipe & Steel Products, Inc., while simple in itself, serves a three-fold function that has resulted in elimination of a serious communications problem, faster handling of customer orders, and a reduction in required clerical time.

Factors leading to the development of this system were centered around the fact that Capitol's warehouse is approximately ten miles from its offices in Philadelphia. Also, due to the nature of the business, the company cannot complete invoices until orders have been filled and reported on by the warehouse.

The need for a multi-purpose invoicing system was dictated by a number of factors inherent in this business. First, steel pipe is sold by the foot, which complicates invoicing because pipe does not come in exact lengths. For instance, pipe "listed" as 20-foot sections may range from 17 to 24 feet. This necessitates exact measurement of each piece before it is shipped. Further, due to strict use requirements, an absolutely accurate control must be maintained over alloy specifications and steel batch heat numbers provided by the mills. These two factors prevent completion of invoices until after an order has been gathered, recorded, and shipped.

As billing clerk in office prepares invoice, order is transmitted to warehouse.

The company also faced the problem of how to get orders to the warehouse promptly and accurately. While an average order is only about four items, the terminology used is such that telephoning orders leaves too much room for error. As an example, a typical order looks something like this: "100'—12" SCH 80 Alloy Pipe A335 P5." One wrong digit and the whole order is wrong.

The former method consisted of typing out an order form, sending it to the warehouse via messenger, and then waiting for a detailed listing of the shipment to be returned to the office from the warehouse. This often meant a 24-hour delay in getting an order out of the warehouse. In the event of a rush order, personnel had no choice but to run the risk of transcribing errors when telephoning the order to the warehouse.

The answer to these problems came in the form of a communications system that can prepare the actual invoice at the same time it transmits an exact copy to the warehouse. Such a system was developed through the cooperation of the Standard Register Company and the TelAutograph Corporation.

Standard Register designed and supplied the necessary forms, which are used with an Olivetti teletypewriter, distributed by TelAutograph.

As orders come into the office, they are first checked against inventory records for availability and then immediately transmitted to the warehouse via the teletypewriter. Since the teletypewriter uses a standard keyboard, preparing the invoice is little different from performing the same task on an electric typewriter. The operator fills in the buyer's name, shipping address, and other basic invoice information, including the actual order. The invoice is then held until a listing of pipe lengths shipped is sent from the warehouse.

At this point the invoice is complete except for quantity shipped and cost extensions. Also, the warehouse has an exact two-copy, printed order form to work from in filling the order. Any chance of error in transcribing the order by hand has been eliminated. In addition, there is no delay in getting the order to the warehouse. As the order is being filled, the warehouse people complete a pipe tally sheet, which lists pipe size, length of each piece, and heat number. The warehouse office then prepares a bill of lading, and the order is on its way.

After the order has been shipped, the warehouse files one copy of the order-invoice form and returns the other copy to the main office for use in billing. The office also receives copies of the bill of lading and pipe tally sheet. This sheet is used to update inventory records. It also acts as a control to insure that the pipe shipped is the same as the type ordered by the customer.

Using the warehouse copy of the order-invoice and the pipe tally sheet, total footage is figured and extensions made. This information is then typed onto the four-part invoice set held over from the original teletypewriter operation. One copy of the invoice is kept for file, and the remaining three copies are mailed to the customer along with copies of the bill of lading, pipe tally sheet, and mill test certificates for the steel.

In addition to making the overall order-invoice procedure more efficient, the system provides a complete and accurate customer order history. Invoices and pipe tally sheets are kept in permanent file. These are used not only for sales analysis purposes, but as a safeguard for customers. In the event a customer should lose the records pertaining to pipe purchased from Capitol, exact information is on hand.

The order-invoice communications system handles large volumes of invoices with ease. Automatic transmission of orders from office to warehouse at the time of preparing the invoice eliminates the need to prepare separate order forms. By reducing order transcribing to a minimum, error potential is reduced to a minimum also. In addition, all billing procedures in the office can be performed by one person, and customer service is improved by cutting costly time delays in getting orders from the office to the warehouse.

At the warehouse, order-invoice form is torn from receiving unit (above) and order is filled. After shipment invoice is returned to office for extension (below).

OFFICE MANAGEMENT and AMERICAN BUSINESS sponsors the "Office of the Year" awards, given each year for the past ten years to the nation's six leading new offices.

OFFICE ENVIRONMENT: FACT OR FANCY?

By ROBERT K. GAD JR.
Director, Office Planning Division
Shaw-Walker Co., New York

OFFICE ENVIRONMENTS affect many persons for a major portion of their waking hours. Light, heat, color, quiet, furnishing, decor, open spaces, private offices, are some of the tangible problems that are fairly easy for the office planner to resolve. A much greater difficulty is the tremendous weight of superstition (note how few skyscrapers have a thirteenth floor), misconception, and downright subterfuge governing requests to him for space and treatment. In developing specifications for the occupants, the measure of the office planner's success depends upon his ability to winnow out the wheat from the chaff, the true from the false, the fact from the fancy, and to make his findings palatable and acceptable.

When a man finally gets his private office, often his first step is to measure it against the offices of other men at his level.

Look at the beginning of office planning. I probably stand alone in my belief that it even antedates what has been called "the oldest profession in the world." I trace it to prehistoric man whose "big business" was keeping alive. To this end, he found that a cave made the best "office" from which to conduct his activities. Refinements in office planning entered the picture when he realized that the mouth of the cave was the best place to "file" the stones used to repel competitors in his "business" of growing old and that a dry ledge made a better work bench than the damp floor. When he learned that a western exposure was to be desired in the winter but not in the summer, "air conditioning" was born.

As civilization developed, man became more advanced in his methods of keeping enemies away from his "office." He moved it from the cave to the house on stilts, then into a stockade, and later to a walled castle with moats and drawbridges. Crude methods of production kept supply down, so that his own needs usually demanded his entire output. Not until a semblance of mass production came into being did competition and distribution problems arise. Because there was no need for "selling," and the main functions of the "office" was still to keep its occupant alive, the moats and drawbridges were necessary to keep the public at a safe distance.

Unfortunately, this attitude is still reflected in many offices today. Receptionists, secretaries, and even armed guards too often convey the attitude of defense instead of welcome. Long, intricate corridors, passageways and anterooms – these are today's moats and drawbridges. Are these defenses a necessary adjunct to modern business? Are they status symbols or just throwbacks? Were they planned or simply repeated through inertia? All of this may appear to be inconsequential until you realize that the visitor held at arm's length today is the same man toward whom you will be pointing tomorrow's multi-million-dollar public relations campaign.

Money wasted on status

With this background, examine the office environment of today and see to what extent it is affected by fact or fancy. Is it fact or fancy that "unless we give the boss the southeast corner he won't buy the plan"? Money spent on the furnishings and decoration required to give his area proper status in the eyes of important visitors will be wasted if the route from the reception room to that extremity of the building is devious and passes through long corridors and work areas that are necessarily less well appointed. The important visitor's time and patience would certainly be taxed. He might well question the courtesy of a host who requires him to make a grand tour of the building in order to reach the meeting place. Callers at one's

"The visitor held at arm's length today is the same man toward whom you will be pointing tomorrow's multi-million-dollar public relations campaign."

home would find it strange indeed if, after leaving the foyer, they were led through the dining room, butler's pantry, kitchen, maid's room, and basement on the way to the living room.

"Too little space is a costly burden." This, of course, is fact, but it is sheer fancy to believe that too much space will not be even more costly. Good communication is the single most important element in any organization. Unnecessary space hampers communication unless additional people and equipment are provided. Since excessive space adds to payroll costs in direct proportion to its excessiveness, it must be avoided.

"A minimal noise level is essential for efficient office work." This is certainly a popular concept, but is it fact or fancy? Do scientific data substantiate this premise? Excessive noise is, of course, undesirable. We do know, however, that too low a noise level will result in total loss of privacy. People will discuss important and even intimate matters freely over the luncheon table in a bustling, crowded restaurant, but will speak in hushed whispers when they are the only customers and the place is quiet. It has always seemed somewhat incongruous that the same company that acoustically treats offices to lower the noise level will sometimes pipe in music to raise it.

Who gets a private office?

"All this company needs is to move to the country (or the suburbs, or the city)." Separating fact from fancy, here is a real problem. Each case requires a great deal of careful study, measurement, and evaluation. The result will probably disclose that no locale is necessarily Utopian. However, companies employing a large, young, female population, whose replacements must come from the local high schools, should hesitate to move from the city to the suburbs. These girls will completely discount all the trials and tribulations and costs of commuting to the glamorous city filled with so many eligible young men, and where the shops and theatres are so convenient. Working in the city also means being "away from home," free at last from parental domination.

Next, there is the subject of the private office. In no other area does the issue of fact or fancy become more clouded. It is often claimed that unless an office employee is completely enclosed by four soundproof, air-tight, impenetrable walls in an area labelled a "private office," he will be reduced to a quivering mass of human jelly, unable to generate enough concentration and thought to decide between ham or cheese for lunch, much less to do his work. Unless Lizzie Tish, the second assistant secretary to the fourth vice president in charge of blowing the noon whistle, sits in the solitary splendor of an ante-room that would make King Tut's tomb look like a gymnasium locker, she

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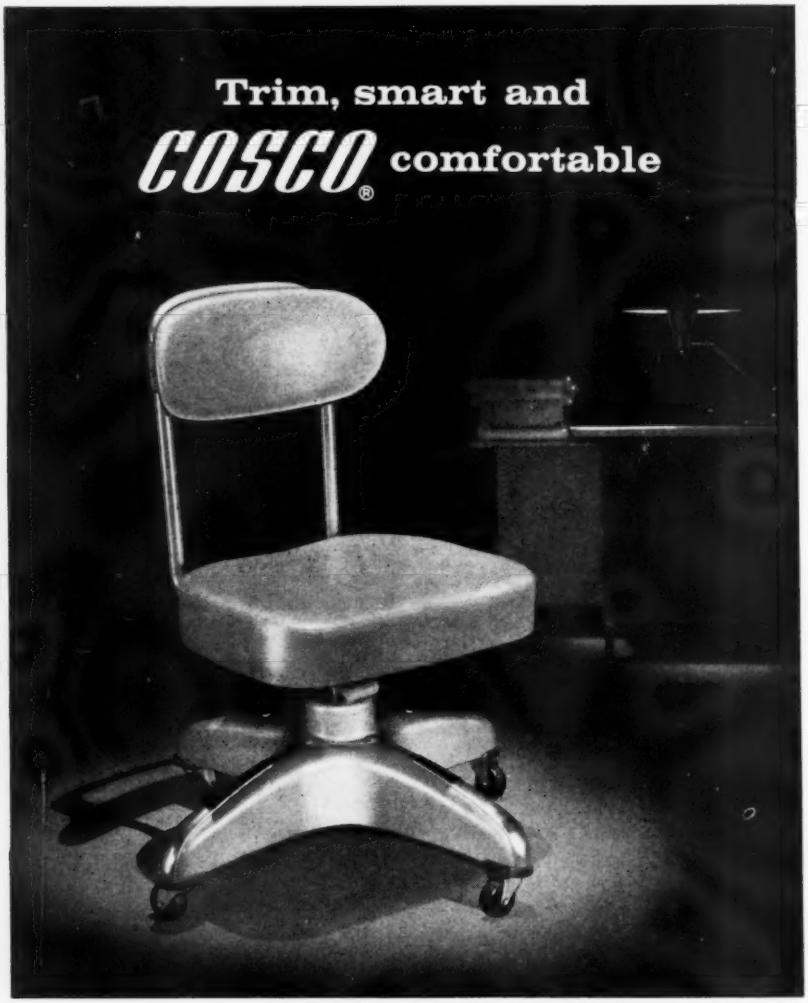

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will never be able to keep up with the coffee break schedule.

We have often seen how an otherwise reasonable man, an honest, considerate, and charitable man who does not beat his wife every Saturday, will lie, connive, and cheat to beat his best friend in the race for confining walls. And after he gets these walls, he will get down on his knees, not in prayerful thanks, but to measure. If he finds that his area measures 14 square inches less than that assigned to his life-long buddy—the dear friend to whom he gave a blood transfusion when his ulcer bled last year—he may blow a gasket. The "dear friend" will immediately be ostracized. There are cases on record where he even tried to get the blood back.

More, bigger fringe benefits

"I need a private office for seclusion, for collusion, for entertaining visitors, to keep visitors out, because I like quiet, because I'm noisy, because I'm an introvert, because I'm an extrovert." Fact or fancy? Only individual study of each case will decide. Unfortunately, in the meantime management is sometimes stampeded into a frantic buying of wood and glass partitions, steel and glass walls, bank screens, glazed rails, and even silly tables with wind-shields that afford about as much privacy as a dimestore showcase.

"More, bigger, and better fringe benefits are the answer to personnel problems and turn-over." Fact or fancy? My opinion is that excessive, illogical, and inequitable fringe benefits cause more problems than they solve. A management that substitutes fringe benefits because it is unable or unwilling to accept its responsibilities as well as its prerogatives has abdicated both its responsibilities and its prerogatives.

"Let's give Willy a private office, a new company car, access to the private dining room, or a key to the executive washroom. He is a problem child and will sulk if we don't." This is the easy way. It verifies the

old proverb, "The squeaky wheel gets the grease." But is it good management? How about the other 99 "silent wheels," the non-problem people who, being human, will smolder and become less productive when they are overlooked. They too deserve management's careful consideration.

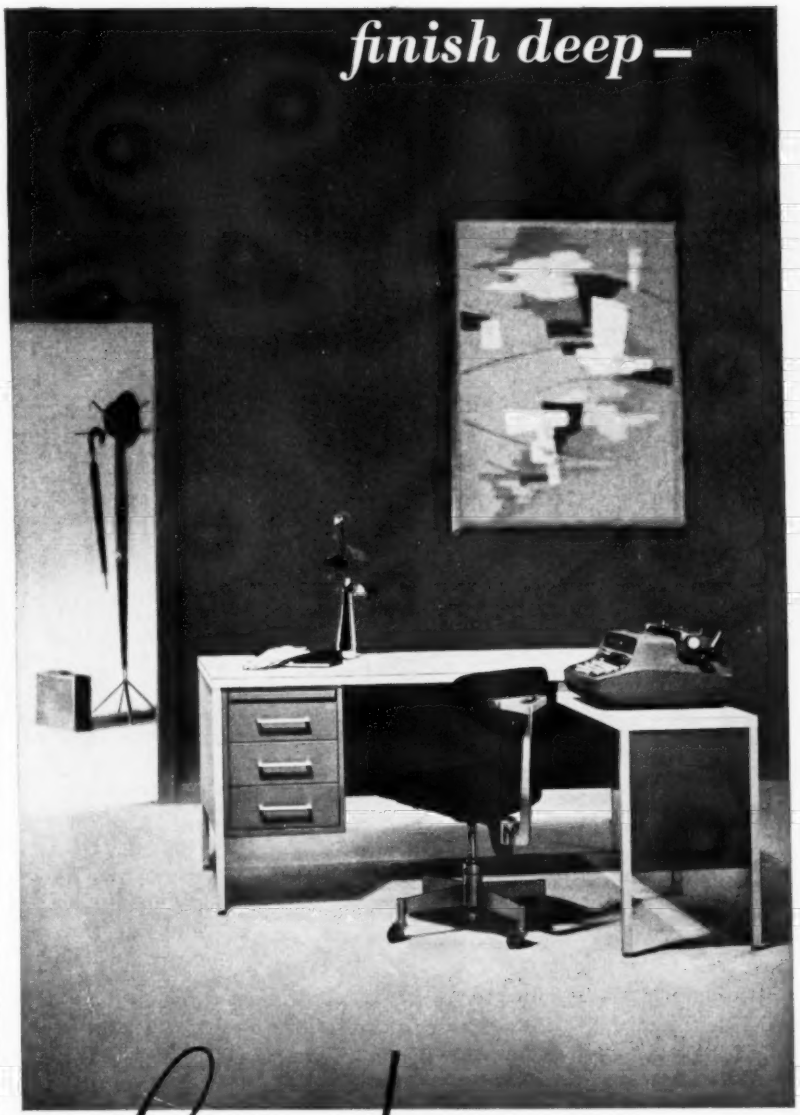
"This builds the ego! That tears it down! This is good psychology! That's bad psychology!" Fact or fancy? One of the major problems in office planning is the multitude of half-baked, amateur, would-be psychologists who expound with great authority what is often nothing more than an old wives' tale. Defending against their unfounded theories led a former commissioner of public buildings for the General Services Administration (in effect, the landlord for all the Federal agencies) to list the following specifications for a successful office planner:

The curiosity of a cat.
The tenacity of a bulldog.
The determination of a taxicab driver.
The patience of a self-sacrificing wife.
The diplomacy of a wayward husband.
The enthusiasm of a jitterbug.
The friendliness of a child.
The good humor of an idiot.
The simplicity of a jackass.
The assurance of a college boy.
The tireless energy of a collector of past-due bills.

I am sure that the whole world marveled at the courage of the submarine crew that sailed under the North Pole and circumnavigated the globe without surfacing. Yet, their job was easy compared to that of the office planning project engineer who must face the bared fangs of the charging, maddened horde of the 599 employees who did *not* get the four-window, southeast corner office.

So if you are ever asked to plan an office, or even to sit on a committe that will do it, *don't* – especially if you expect to go on working for that company and living in that community. Run for the nearest exit! Call the police! Get an expert! Get two experts! But don't do it, for experience has amply demonstrated that "Hell hath no fury like an office planned."

***beauty** that's*
more than
finish deep –



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OFFICE DESIGN

MORE LIGHT FOR THE OFFICE

By JOHN ALLAN RHEA

FOR 5,000 years man's sole source of artificial light was flame – fires, candles, gas jets, etc. The turning point came when the electric incandescent lamp was invented 80 years ago. Electric illumination removed the office's dependence upon daylight and made it practical, for the first time in history, to plan large interior work areas.

Office lighting levels have risen steadily since that time. Incandescent lamps brought the level to about 35 footcandles (35 times the amount of light cast by an ordinary candle on an area one foot away), or 7 per cent of the intensity of outdoor light on a cloudy day. At this point, however, radiant heat given off by the lamps began to cause discomfort, and lighting levels were stabilized.

The development of the fluorescent lamp, first displayed commercially at the 1939 New York World's Fair, changed all this. The lighting level could suddenly be boosted to almost three times the previous level without increasing the amount of radiant heat. Air conditioning completed the metamorphosis. By neutralizing the heat radiated by lamps, air conditioning enabled lighting levels to approach 100 per cent of the light outdoors on a cloudy day.

Increases in office lighting levels since World War II have been spectacular. For example, the Illuminating Engineering Society, foremost research organization in the field of lighting, recommended 50 footcandles of illumination for general office work in its 1947 edition of "Recommended Practice of Office Lighting." In the 1960 edition of the same publication, 100 foot-

Luminous ceiling diffuses light throughout lobby of Guarantee Trust Co., Toronto.

Better lighting is economically feasible

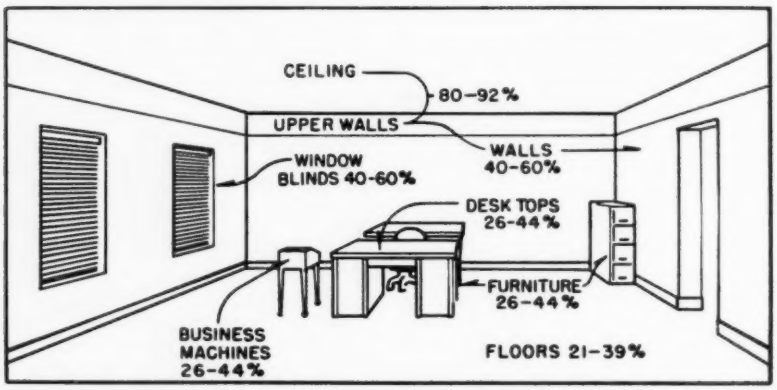


Illustration from Illuminating Engineering Society shows the percentage of light that can be reflected from objects in the office without causing uncomfortable glare.

Albert W. Lange, Chicago district manager of Holophane Co., checks lighting level in lobby of LaSalle Casualty Co. Company maintains 110-footcandle illumination levels.

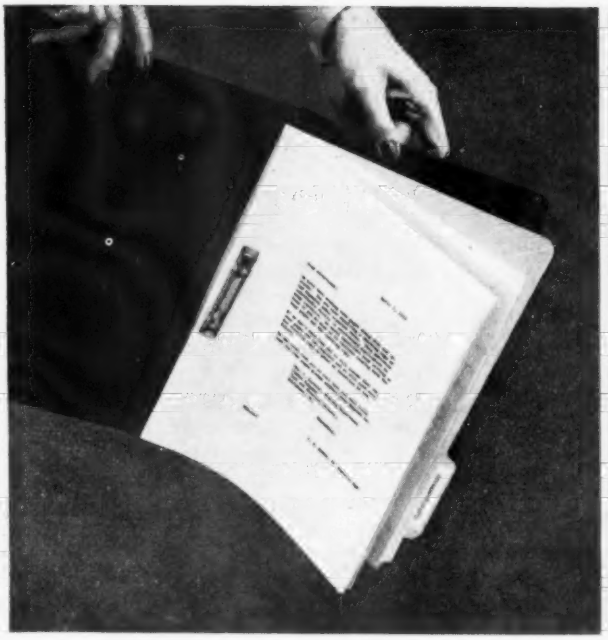
candles were recommended. The IES also recommended 50 footcandles for operating business machines in 1947; the 1960 recommendation was 150 footcandles. The significance of these increases is twofold: First, modern lighting equipment to meet these requirements is available for the first time. Second, essential supplementary fixtures such as air conditioning and non-glare office equipment and furniture now permit high levels of office lighting intensity.

Furthermore, the use of better office lighting has become economically feasible. The Sylvania company has estimated that proper lighting takes only 50 to 75 cents of the $30 per square foot cost of operating an office. (Under this break-down, $25 per square foot is paid for salaries, $2.50 for the space, $1.50 for services and supplies, and 75 cents for furniture and equipment.)

A two-year joint study by the Public Buildings Administration and the Public Health Service offers even more dramatic evidence of the value of good lighting. After lighting improvements were made in a card-punch subsection of the Bureau of Internal Revenue, productivity of its 95 employees increased

With all 129 General Electric lamps operating at peak levels, conference room of G. A. Refel & Co., Chicago electrical engineering firm, receives 500-footcandles.

Phillip Sporn, president of American Electric Power Co., New York, can select lighting levels up to 300 footcandles over his desk. Such extremely high levels are rarely used, but serve more as advertising.



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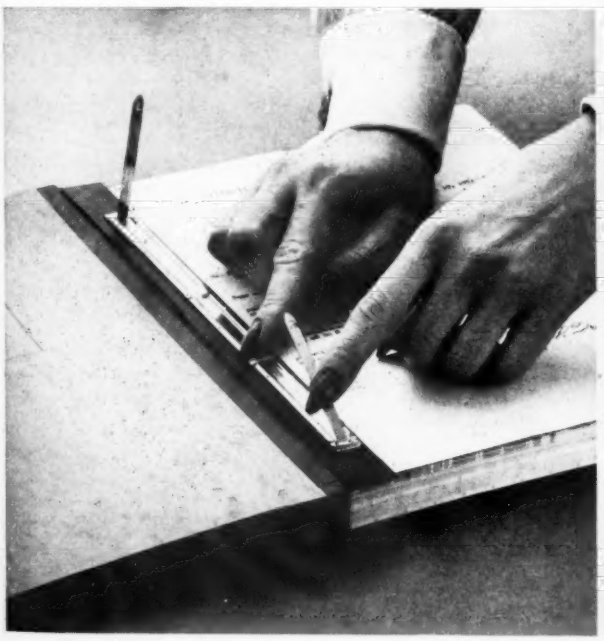

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Intensity of illumination is only one consideration

5.5 per cent. The cash value of this apparently small gain was a payroll saving of $13,228 in two years—almost $140 per worker. The cost of installing a modern lighting system, painting the room, refinishing furniture and machines, and installing a new floor was $6,498. Thus, the improvements paid for themselves in one year.

Basic research has been another factor in the swiftly rising levels of office lighting. The impetus came from Dr. H. R. Blackwell at the University of Michigan, who established formulas to determine the light necessary to see different types of work. Further research by the Illuminating Engineering Society resulted in the tables of footcandles recommended for office tasks. (See chart below.)

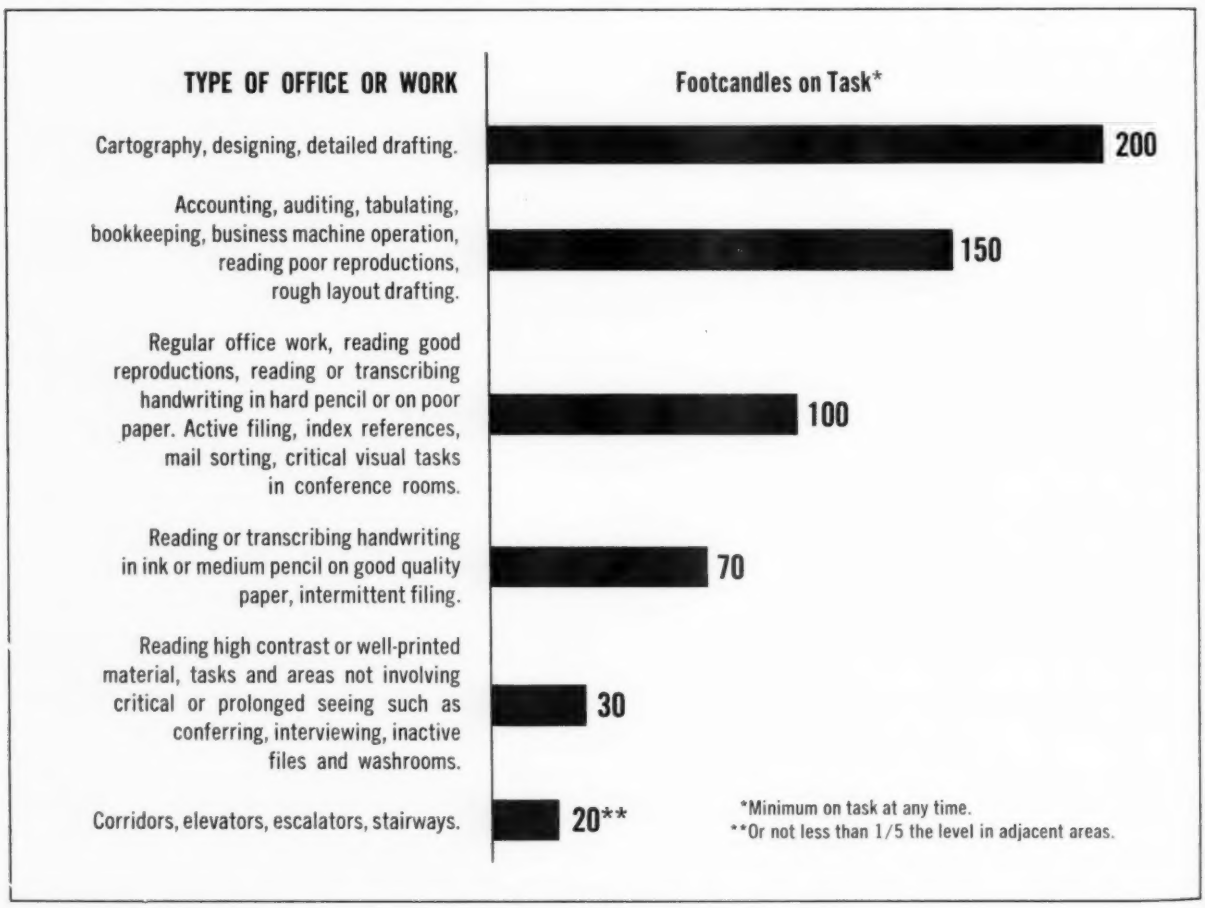
Some of the most advanced new offices provide evidence of this trend toward higher lighting levels. The executive office of Philip Sporn, president of American Electric Power Co., is an outstanding example. Mr. Sporn can select lighting levels up to 300 footcandles over his desk. While his company has an understandable interest in showing off the uses of electricity and does not have to watch the electric bills too closely, this office may set a standard in executive lighting.

Not "footcandle engineers"

Another example of high lighting levels is the new office of the La Salle Casualty Co. in Chicago. All areas receive more light than recommended by the Illuminating Engineering Society. The results have been a working environment in which employees operate at maximum efficiency, unhampered by shadows or glare, and visitors are greeted by a modern, bright, up-to-date decor. The minimum illumination level is 110 footcandles; the general office receives 130 footcandles and the data processing room, 150. All lights are in the ceiling and were installed by the Holophane Co., New York.

But intensity of illumination is not the only consideration in office lighting. Lighting specialists flinch from the term "footcandle engineers" and constantly seek new ways to use light in the office. Noel S. Florence, chief designer of the architectural lighting division at Lightolier, Inc., asks these penetrating questions about office lighting:

"What of the old relationship of people and light? We know that


TYPE OF OFFICE OR WORK
Footcandles on Task*
Cartography, designing, detailed drafting.
200
Accounting, auditing, tabulating, bookkeeping, business machine operation, reading poor reproductions, rough layout drafting.
150
Regular office work, reading good reproductions, reading or transcribing handwriting in hard pencil or on poor paper. Active filing, index references, mail sorting, critical visual tasks in conference rooms.
100
Reading or transcribing handwriting in ink or medium pencil on good quality paper, intermittent filing.
70
Reading high contrast or well-printed material, tasks and areas not involving critical or prolonged seeing such as conferring, interviewing, inactive files and washrooms.
30
Corridors, elevators, escalators, stairways.
20**
*Minimum on task at any time.
**Or not less than 1/5 the level in adjacent areas.

Create "light moods"

higher lighting levels enable us to see faster and with less fatigue. We know that the quality of the light is even more important than the quantity. It must be glare-free and comfortable to live with. But when we achieve both these objectives we may have created a dull environment. Many of us are captive in this man-made environment. Because artificial light has made possible large multi-layer work spaces, we are often denied the changing moods, colors, and patterns of natural light. How does this affect our spirit? Can we be inspired or stimulated by changing this environment?"

Applications must be economical

Mr. Florence answers his own questions by citing light's versatility and projecting its possible future uses: "We can create intense patches of light or areas of light and shade to vary large areas of even lighting. Why should all the light come from the ceiling? We can have vertical planes of light. We can vary the color and intensity of these planes. We can introduce subtle rhythms of change during the day. We can use decorative planes of light to give a more intimate scale to large areas or perspective in small areas. The possibilities are exciting, but for general applications they must be justified economically."

Another consideration is glare—both direct glare from lighting fixtures and reflected glare from furniture and equipment. Here, too, research is providing standards for the office. The illustration on page 50 gives general guides for the percentage of light that can be reflected from ceilings, floors, walls, window blinds, office furniture, and machines, without eyestrain to office workers.

To provide the proper quantity and reflection of light, five general types of lighting systems are available to the office:

Indirect systems cast 90 to 100 per cent of the light to the ceilings and upper sidewalls from which it is reflected to all parts of the room. With the ceiling in effect the light

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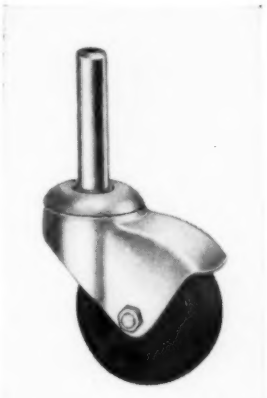
"Flo-Tork" tilt mechanism.



Hooded office-chair caster.

Whether you're looking for comfort, appearance, floor protection, or longest possible life for office chairs, here are two ways *hardware by Bassick*—world's largest maker of casters and office chair tilt mechanisms—can help you get it.

"Flo-Tork" chair control. Here's an outstanding Bassick contribution to office chair styling. Bassick "Flo-Tork" tilt-chair mechanism does away with unsightly coil springs beneath the chair seat, gives chair a trim, functional silhouette. It's smoother-acting, more comfortable, too, and easy to adjust for your weight while sitting upright and naturally in the chair.

Non-marking office chair casters. Floors are cleaner, and easier to keep clean, when your office chairs and furniture move on Bassick casters. They are easy rolling and easy swiveling, and stay quiet for the life of the chair.

These are just two samples of Bassick's broad line of casters, tilt-chair mechanisms, glides, rests and floor-protectors for office chairs, furniture and equipment. Look for the "Bassicks" on the chairs and equipment you buy. They mean extra value in comfort, reliability and life. 1.29A

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(Circle No. 4 on Reader Inquiry Card)

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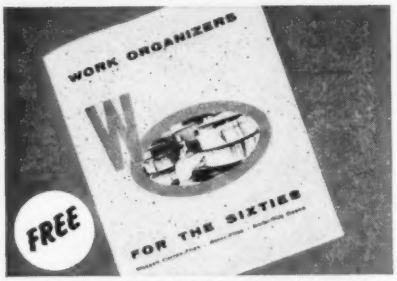

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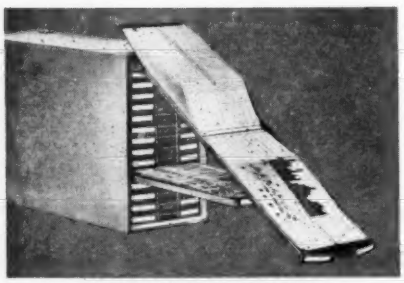

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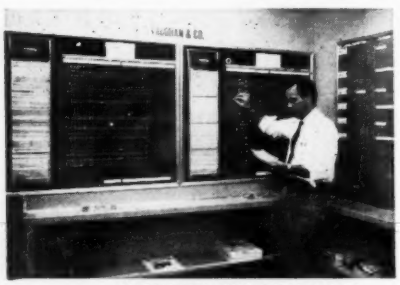

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(Circle No. 52 on Reader Inquiry Card)

OFFICE DESIGN

Lighting is element in design of office

source, the diffused quality of the light minimizes shadows and reflected glare.

Semi-indirect systems throw 60 to 90 per cent of the light output toward the ceiling and upper sidewalls. The rest is directed downward. Because this lighting also uses the ceiling as the main source of light, ceiling finishes should be light in color for high reflectance.

General diffuse or direct-indirect systems contain about equal components for direct and indirect lighting, and illumination is predominantly from the downward component. The general diffuse system distributes light about equally in all directions. The direct-indirect produces little light in angles near the horizontal.

Semi-direct systems direct 60 to 90 per cent of the light output to the work surface. Only a small amount of light illuminates the ceiling.

Direct units direct practically all the light downward, with minimum losses on ceilings and sidewalls. Unfortunately, the directional characteristics of this type of lighting may produce shadows and glare unless the units are large or closely spaced.

Finally, lighting is an important —although frequently overlooked— element in office design. Lighting must be considered early in architectural planning so it can be coordinated with the other elements in the office. The lighting system must be compatible with the building structure, with the mechanics of the hung ceiling, with the acoustical system, and with the air conditioning system. The close relationship between lighting and air conditioning alone poses a thorny problem to office planning. Since air conditioning must be boosted to accommodate higher lighting levels, the budget for air conditioning may limit the lighting level as much as the budget for lighting itself.

For these reasons, at least one architect assigns lighting a primary role in planning new office space. Stephen Tuba, of the J. Gordon Carr firm in New York, calls lighting "the first thing to fight for" when negotiating a new lease with a building management.

The staff of *Office Management and American Business* wishes to acknowledge the cooperation of the following companies that provided information and photographs: J. Gordon Carr & Associates, New York; Corning Glass Works, Corning, N. Y.; Dow Chemical Co., Midland, Mich.; Empire Office Furniture Co., New York; Holophane Company, Inc., New York; Illuminating Engineering Society, New York; Lightolier, Inc., Jersey City, N. J.; Luminous Ceilings, Inc., Chicago; Marvin Electric Manufacturing Co., Los Angeles; Sylvania Electric Products, Inc., Lighting Fixtures Division, Wheeling, W. Va.

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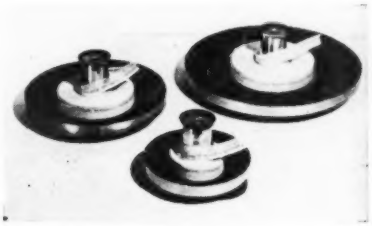
NEW SYSTEMS AND EQUIPMENT

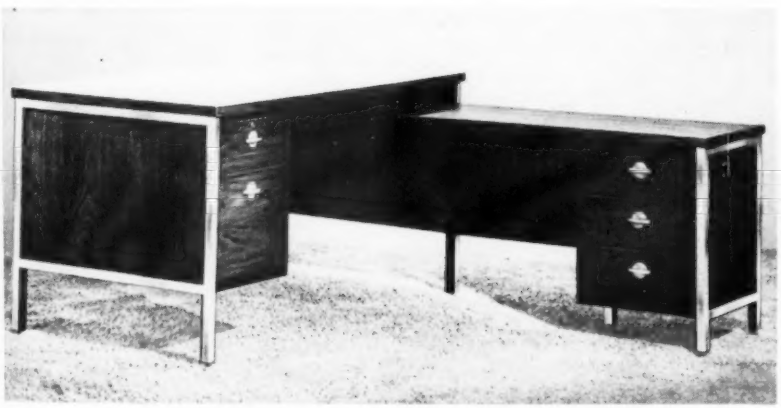
◀ Aperture card copier N-25

A new automatic aperture card copier has been developed for large volume production of duplicate "Filmsort" aperture cards. Called the "Filmsort" Uniprinter O-41, the machine makes "Duplicard" copy cards at the rate of 2,000 an hour. Price of the machine is $25,000 from Minnesota Mining and Manufacturing Co., 900 Bush Ave., St. Paul 6, Minn.



▲ Tape unwinders N-26

New center feed unwinders make it possible to plan consecutive use of punched data tapes without having to rewind. The unwinders are available in six, nine and twelve-inch diameters, and are part of the "Tape-File" line of data processing accessories from Dresser Products, Inc., P.O. Box 2035, Providence 5, R. I.



▲ Pre-assembled furniture N-27

The 14 Series, a new line of pre-assembled office furniture, is now available. Exterior construction is flat-cut walnut; interiors are oak. Prices range from $198 for a credenza to $343 for an L-shaped unit such as the one shown here. Wood and plastic tops are available. The Jasper Desk Co., Jasper, Ind.

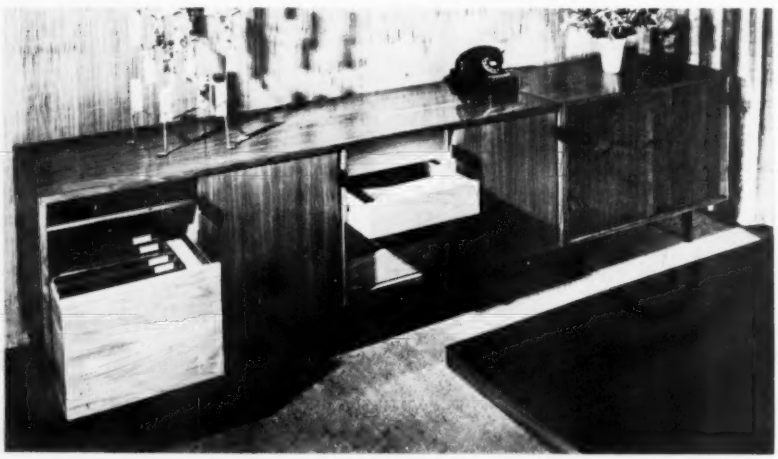
▶ Desk-top collator N-28

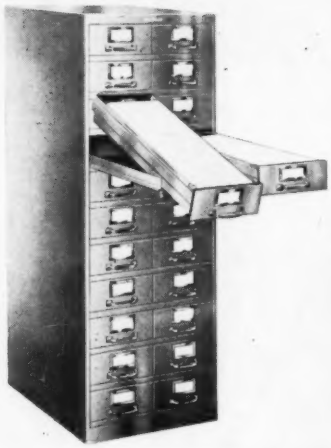
A new six-station desk-top collator collates 8½ by 11 inch sheets of paper in sets of six sheets at the rate of 120 sheets a minute. It intermixes paper weights and finishes. The machine may be loaded with one hand, and a flick of a switch automatically lifts the pushers from the paper. Farrington Manufacturing Co., Needham Heighs 94, Mass.

NEW SYSTEMS AND EQUIPMENT

▲ Automatic telephone dialer N-30

Rapidial, a new automatic dialer with a magnetic memory, "remembers" and dials up to 290 telephone numbers by a simple push of a single dialing bar. Numbers may be on an internal switchboard, local or long distance, or even coast-to-coast over the Direct Distance Dialing network. The unit was developed by the Thomas A. Edison Research Laboratory Division of McGrew Edison Co., and is being readied for production for the Western Electric Co., supply unit of the Bell System. The unit is operated by twirling the alphabetized roster of frequently called numbers to the proper name, lifting the receiver, and pressing the automatic dialing bar.





▲ Tab card file N-29

Shaw-Walker's new 22-tray tabulating card file has a capacity of 90,000 cards. The cabinet is only 52 inches high, the same as the company's standard four-drawer files. Trays operate on heavy-duty roller cradles and can be fully extended for reference at the cabinet or removed. Shaw-Walker, Muskegon, Mich.

▶ Pocket transmitter N-31

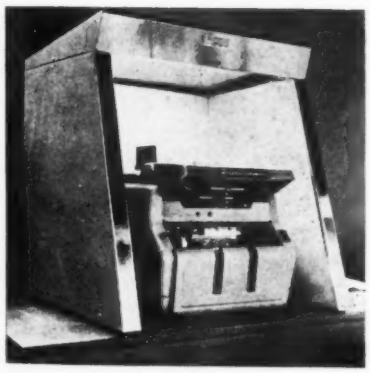
The "Handie-Talkie" pocket transmitter is the first fully transistorized FM radio transmitter to operate on standard VHF (very high frequency) two-way mobile communications frequencies. The device weighs less than a pound and fits in a pocket. The "Handie-Talkie" contains microphone, antenna, and batteries. Shown at the right of the transmitter is the companion VHF pocket receiver. Motorola, Inc., 4501 W. Augusta Blvd., Chicago 51.

◀ Wood cabinets N-32

Slim-lined cabinets combine the beauty of fine woods with fitted interior storage compartments. Sliding doors of walnut veneer, with black leather pulls, conceal a dictating machine shelf, file drawer unit, pull-out drawers, and adjustable shelves. Cabinet on the left, Model #541, is about $425; Model #540, on the right, $245. Knoll Associates, Inc., 575 Madison Ave., New York 22.

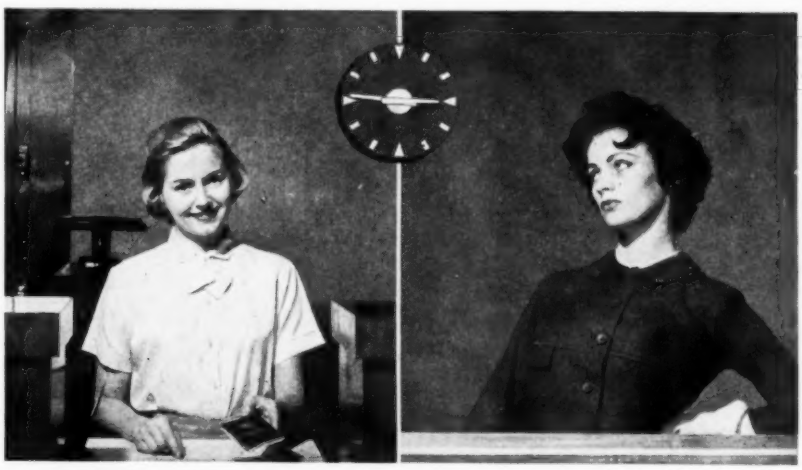
▶ Account verifier N-33

A new account number verifier (shown between the National adding machine and punched tape recorder) designed to detect clerical errors made in entering account numbers into business machines has been developed. The transistorized verifier is part of the system to generate punched paper tape or punched cards for electronic data processing. The verifier's part in the operation is to apply a simple mathematical test, at electronic speeds, to each account number entered. The National Cash Register Co., Dayton 9, Ohio.



▲ Acoustic cabinet N-34

Sound proofing cabinet for use with Cummins - Chicago's Cansamatic check canceling machine is now available. Custom built for Cummins - Chicago by International Sound Control Co., the cabinet cuts down 50 per cent of the machine's noise. Cabinets are available from Cummins-Chicago Corp., 4740 N. Ravenswood Ave., Chicago 40.



WHICH girl belongs to these legs?

Not Miss Clock-Watcher. She's been standing on a hard floor all day and her feet and back are aching—she can hardly wait to go home.

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8 Decorator colors to match any office decor

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THE HYGIENIC DENTAL MANUFACTURING CO.
AKRON 10, OHIO, U.S.A.

(Circle No. 24 on Reader Inquiry Card)

◀ Tab guide **N-35**

The AICO tab guide is designed to be processed through tabulating equipment with data processing cards. The guides are reinforced by a thin strip of DuPont Mylar plastic film across the tab and top edge of the card. G. J. Aigner Co., 426 S. Clinton St., Chicago 7.

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(Circle No. 51 on Reader Inquiry Card)

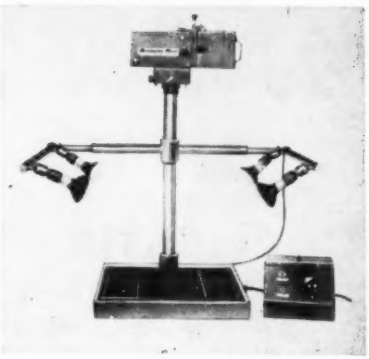
▲ Mobile file **N-36**

A mobile rotary file on a rollaway cabinet keeps data processing tape accessible anywhere in the computer room. The mobile file revolves a complete 360 degrees. Reels of tape are held compactly in metal cases, where they can be visibly coded. Less active tapes can be stored in lower drawers of the cabinet beneath. Acme Visible Records, Inc., Crozet, Va.

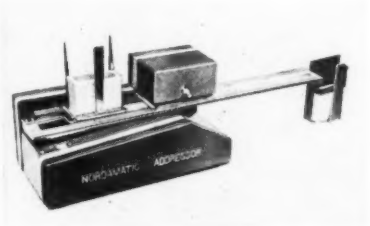
▲ Furniture group **N-37**

Walnut contemporary U-grouping with matching wall pieces is part of the new "Linear" line. The line consists of 31 modular units in hand-rubbed oil finish. Accompanying "Linear" hanging pieces offer accessory items such as the bar and shelf on uprights (rear, left) and sliding-door bookcase and shelf on uprights (rear, center). Designer is Luther Draper, Ocala, Fla. Myrtle Desk Co., High Point, N. C.

▶ Planetary camera N-38



The Abstracter 1100 planetary camera can record the front and back of a document on a single frame of 35mm. film. The camera offers 16 to 1 and 20 to 1 reductions and full frame or half frame pull-down with each. Controls include: double exposure switch, Color-Stat exposure meter, audible warning signals, foot control switch, and detachable camera head. The unit accepts a 100-foot roll of non-perforated 35mm. film and features a detachable magazine and cut-off knife. Remington Rand Systems Division of Sperry Rand Corp., 122 E. 42nd St., New York 17.



▲ Addressing machine N-39

Nord Photocopy and Electronics Corp. entered the addressing machine industry recently with its electric "Nordamatic Addresser," which uses stencils made on an office typewriter. The Nord machine, which is capable of obtaining more than 100,000 impressions from a typewritten stencil and can print 120 addresses a minute, retails for $249. Nord Photocopy & Electronics Corp., 300 Denton Ave., New Hyde Park, N. Y.

▲ Adding machine N-40

Everest "Plurima Electrica" is a new 10-key electric adding machine with automatic credit balance. The portable device weighs only 15½ pounds and is priced at $189.50 plus Federal excise tax. Nationally distributed by Alma Office Machine Corp., 349 Broadway, New York 13.

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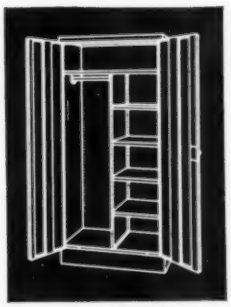
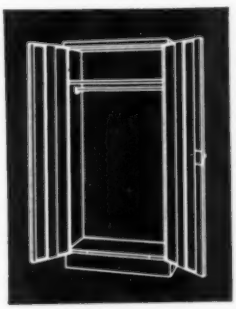


Combination



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(Circle No. 8 on Reader Inquiry Card)

TOOLS OF THE OFFICE

DUPLICATING PROCESSES AND EQUIPMENT

By MARY D. LYONS

DUPLICATING EQUIPMENT (as opposed to copying equipment which was discussed last month) is intended to make long runs at high speed, and at low cost per copy. In practice, each of the duplicating processes requires an intermediate such as a master, stencil, or set type.

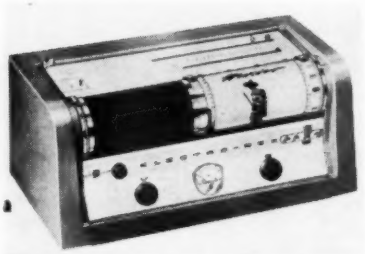
The Processes

The stencil process is perhaps the most well-known of the duplicating methods. It is frequently referred to as "Mimeograph" after the trade name used by A. B. Dick Co.

The master is a stencil of paper, plastic, metal or other material in which holes or slits have been made, corresponding to the lines and letters to be reproduced. These holes allow ink or other printing substances to pass through, thus creating a copy of the original on the paper or other material beneath the stencil.

Most stencils are designed so that letters and lines are not cut completely through the material. This is arranged in order that the centers of letters such as "o" and "g" will remain in place. Frequently, the stencil has a fibrous or porous base, through which ink may pass easily. This is covered with a waxy coating, which prevents the passage of ink.

The "cutting" of a stencil is simply the process of pushing aside the coating where lines and letters are to be reproduced. The fibrous base remains uncut as a support for the structure of the stencil. Stencils may be prepared by hand, using a stylus or other such instrument, by typewriter, by printing with dies or by such means as the facsimile process. By using the latter, stencils



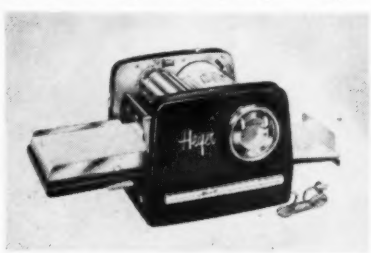
Electro-Rex's Model 3S4 duplicator.

can be made to reproduce relatively complex material. After the stencil has been prepared, it is wrapped around the rotating drum of the duplicator or, if a twin-cylinder machine is used, around the screen which shrouds the two cylinders.

Ink seeps through the stencil from within the drum or screen. At each turn of the drum (or each cycle of the stencil on the twin-cylinder type of machine), a sheet of paper is fed into the machine and moves into contact with the stencil. The final copy is made as ink passes through the holes in the stencil.

Ink may be either liquid or — particularly for use with machines of the twin-cylinder type — paste. The paste form, which is available in tubes, is usually considered less messy to use. Copies can be printed in ink of any color, and on paper of any color. While most machines print only one color at a time, it is possible with some equipment to print two colors at once.

Below, new duplicator by Heyer Corp.



Copy paper is generally rough, primarily in order to prevent ink smearing by successive copies. However, with the newer, quick-drying inks (and/or by slip-sheeting), copies can be made at a satisfactory rate of speed on better paper.

Electrically operated stencil duplicators can run at speeds of 180 to 240 copies per minute. Manual models generally run at speeds ranging from about 60 to 100 copies per minute. The expense per copy fluctuates with the length of the run, decreasing as the run increases, and with the materials used. In the instance of a fairly typical run of 100 copies, cost per copy might be just over a third of a cent; the cost decreases to a much smaller fraction of a cent if the run is increased to 1,000 copies.

A properly prepared stencil of fairly good quality should last through a run of several thousand copies. If special stencils are used (plastic or metal), much longer runs are, of course, possible.

Offset

The offset process, as used in the office, is a simplified version of the printing process known as photo-offset lithography. Like that process, it turns out work of high quality; it also is based upon the principle that oil (or grease) and water do not readily mix.

In order to use offset duplicating equipment, a master or plate must first be prepared. This may be made of paper, metal or plastic. The desired copy can be transferred to it with a typewriter (utilizing an

appropriate ribbon), or with any writing or drawing implement which is able to produce the necessary greasy image. Or offset masters can be prepared photographically or by other copying techniques such as xerography, photocopy, Verifax, diazo, and facsimile.

Although offset equipment may be more difficult to operate than, for instance, a spirit duplicator, new advances in machine design have reduced the skill required by making a number of the functions automatic. Examples are automatic moistening of the master when it is first placed on the machine, automatic cleaning of blankets, automatic adjustment of roller pressures to accommodate varying weights of paper stock and masters, and automatic balancing of the ink and water mixture.

As the first step in the process, a master must be prepared, using special paper with a special carbon face-up underneath it. When the material to be copied is typed, written or drawn onto the master, its image appears on the back of that sheet in the form of dye transferred from the special carbon. The image, of course, appears in reversed form.

The master is placed around the rotating drum of the duplicating machine. (Some simpler forms of duplicators use a tray on which the master is placed flat.)

During the revolution of the drum, a sheet of glossy copy paper is fed into the machine and moistened slightly with a solution which contains alcohol. When the paper meets the master, the alcohol solution serves as a solvent acting to remove a thin layer of dye from the master. This dye is deposited on the copy paper to make the final copy.

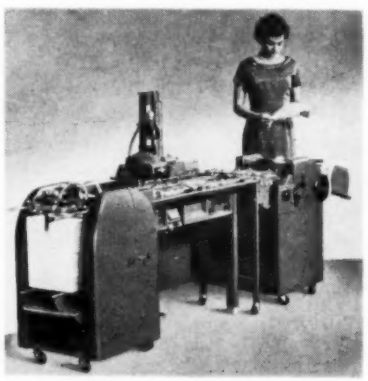
Like the gelatin technique, each copy is slightly fainter than the one before; however, with a properly prepared master, it is possible to obtain runs of several hundred copies.

Relief

The relief process prints from embossed or raised letters, as a typewriter or rubber hand stamp. The letters may be inked directly as in the case of a hand stamp, or they may print through an inked ribbon, as with a typewriter. Most machines can use either of the two techniques. Relief process equipment usually prints from raised metal (or rubber) type, which is set by hand into channels on either a rotating drum or a flat printing head, depending on the design of the equipment.

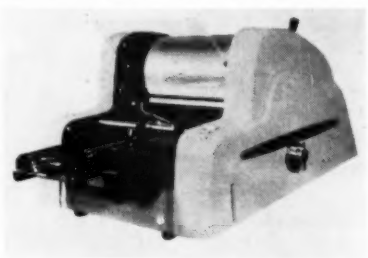
Gelatin

The gelatin process, like the spirit process, makes use of aniline dyes. Both processes are sometimes called "hectograph," the spirit process being distinguished as "liquid hectograph." While the methods are chemically very similar, they differ in their mechanical arrangements.



Above, Addressograph Class 1900.

Below, Old Town's electric Model 9E.



Special Liquid

The special liquid category consists primarily of the Azograph process. This technique is designed to produce copies with the ease and simplicity of the spirit process. In general, it sacrifices length of run for cleanliness of operation; it is assumed that standard runs will not exceed 100 copies by any great margin.

New Developments

Addressograph-Multigraph Corp. has several recent developments. An addition to the Multilith Offset line is the Model 2550 Duplicator. The outstanding feature of this machine is complete automation of the duplicating cycle. This is achieved by means of a plug-in electrical chassis in the base of the machine. When the operator inserts a master copy and shifts a lever, the machine positions the master and coordinates the flow of ink moistening solution and begins feeding paper stock. When the predetermined number of copies has been run, paper feeding stops, the blanket is automatically cleaned, and the machine prepared for the next cycle.

The firm's Model 1000, which embodies many traditional features of Multilith Offset equipment, is said to have a "Jack-of-all-trades" adaptability. The machine has an automatic blanket cleaner, "Simflo fountain ink feed," full 1,000-sheet capacity feeder; it has a production speed of 100 copies per minute.

Old Town Corp. has the Model 9-E electric spirit duplicator. The machine has a 9 by 17-inch cylinder and a 17-inch copying area. The machine is said to have new type rollers and positive feed which insure single sheet feeding every time. It can be positioned anywhere on the paper and works well on all duplicator stocks, finishes, and weights from glossy legal size sheets to post-cards. Drop-in master loading chute also insures accurate setting.

Addo-x, Inc., has recently announced the introduction of its Roneo 350 duplicator, offered in both electric and hand models. Some of the special features on the new machine are: constant speed, full ream feed, fully automatic inking; single lever control for switch and feed; hairline registration; dual system feed mechanism; 20-second color change Ejecto strip with both pick-off and follow-through strippers; automatic pre-selector shut-off feed; precision stacking of finished copies; high quality reproduction of photographs, half-tones and all types of printed matter, when used with Roneo-Tronic stencils.

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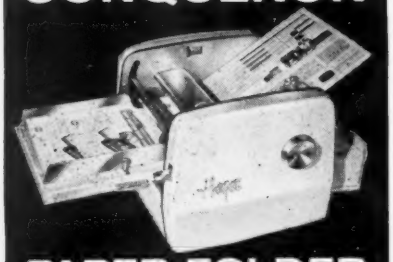

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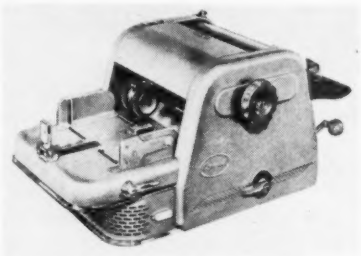
TOOLS OF THE OFFICE



Wolber Duplicator's new Copy-Rite.

Wolber Duplicator & Supply Co. has the electric Copy-Rite spirit duplicator. All operating actions are accomplished by one lever; machine stops automatically after paper load has been exhausted. A margin adjustment raises or lowers reproduced copy to the desired position while Copy-Rite is operating.

Weber Marking Systems, Inc. has a new shipping stencil. The stencil is coated with carbon on one side to permit typing or handwriting with business forms. Called the Weber "Carbon-Cote" Tab-On Stencil, it is tabbed over the "Ship-To" area of the order-invoice or bill-of-lading form and prepared as a by-product of the forms writing, and then used to address labels, tags, or cartons. The carbon coating eliminates the need for a separate carbon sheet between the stencil and the first copy of the form. The carbon is impregnated into the stencil and leaves a clean, ribbon-like print on the form when typed or handwritten.

The Ecusta Paper Division of Olin Mathieson Chemical Corp. has announced its new Waylite offset duplicating paper. The paper is said to be "a natural for statement inserts, catalog sheets, price lists, internal reports and sales bulletins; and for printing, where a fine, low-bulk, extremely white, opaque printing paper is wanted."

Electro-Rex Corp. of America, a division of Rex-Rotary Corp., has announced the addition of its new electronic stencil and offset plate etching machine, the Electro-Rex Model 3-S-4. In order to operate the machine, the operator inserts the original and the stencil or offset plate, sets the sensitivity, presses a lever; the rest is automatically completed by the machine. In order to prevent the accumulation of burned carbon particles inside the machine, a vacuum pump has been installed, combined with a filtering device that eliminates burning odors. An illuminated indicator points to a scale that is synchronized with the scale on the drum above the original.

Standard Duplicating Machines Corp. has announced its new standard Duplicenter with electronic automation. The company claims that this model will be a boon to "all businesses beset with paper work pile-up." The key feature of the machine is said to be its accessibility. The machine allows the operator to see the duplicated work and easily remove the copies without rising from her chair or changing her position. A front-feed model, the machine offers a choice of operating controls. The master attaching clamp may be opened by hand lever or foot control. The flick of a switch gives continuous automatic feed; constant pressure on a foot pedal accomplishes the same thing. The machine may be

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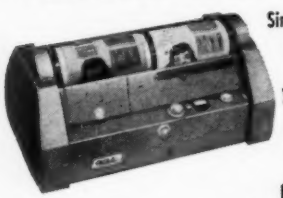
The amazing print-like quality of this new mimeo process is made possible by Gestetner's press-like design. It uses printer's style paste ink, dual cylinders, and automatic controls for inking, feeding, counting and even jogging. It will reproduce anything, from a halftone to a typed letters. Gestetner costs no more than the old fashioned mimeo.

Gestefax *makes your stencils automatically by electronics.*



Simply turn the switch. In a few minutes you will have a finished ready-to-run stencil in perfect detail.

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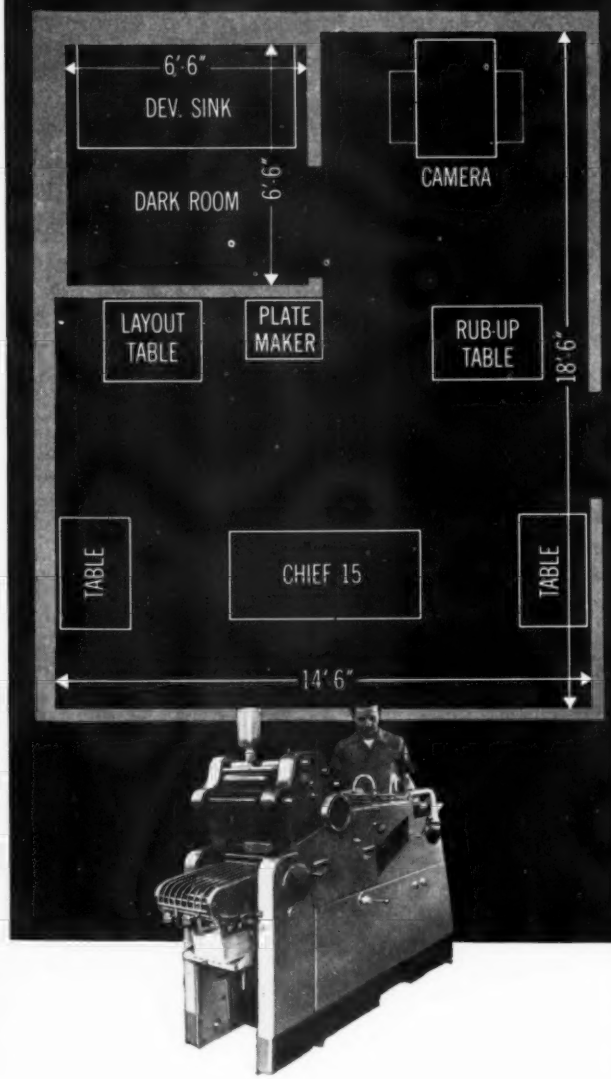

For less than a dollar per *working hour*, you can purchase a complete ATF offset department, including: press, camera, darkroom sink, negative layout table, platemaker, and utility table. If you have some seldom-used equipment to trade in, chances are you will need little or no down payment.

Or you can lease the complete "package"—or any part of it—without trading in any equipment or making a down payment.

Either way, you get brand new equipment—and only what you need—on the easiest terms. You can pay as you go and make a profit as well.

Heart of this plan is the ATF Chief 15, the small press with the big press features...the press which has been chosen by over 1500 professional printers. You can see this press and the related "package" equipment in operation at your nearest ATF Branch Office; or your ATF Representative will supply full details, including a folder, "How to Set Up for Offset," which outlines various plans and choices of equipment. If you prefer, use the coupon below.

ATF

ATF Type Faces used in this advertisement: heads, Craw Clarendon; text, Bodoni Book; coupon, News Gothic Condensed.

American Type Founders, Dept. B
200 Elmora Avenue, Elizabeth, N. J.

I'm interested in your "Offset Package Plans" on a ☐ purchase ☐ lease basis.

Name_____ Title_____

Company_____

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City_____ Zone_____ State_____

(If you have trade-in equipment, list descriptions, models, serial numbers)

American Type Founders

(Circle No. 3 on Reader Inquiry Card)

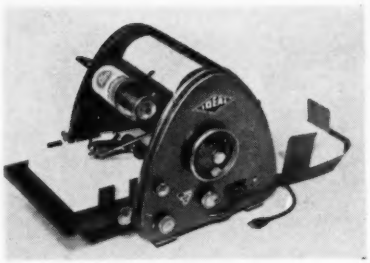
activated for single copies either by a feather-touch button at the finger tip of the operator's right hand, by a toe touch on the foot pedal, or by electronic feed. A micromatic adjustment permits instant change in registration to compensate for any inaccuracies in printed forms.

The Gestetner Corp. has a new electronic device called the Gestefax. It is designed to reproduce any given subject, i.e. photographs, office forms, drawings, letters, etc., directly onto a stencil. The stencil is then ready to reproduce as many copies as desired. Proof reading is eliminated because the stencil is an exact copy of the original.

In the past, the firm states, illustrations on stencils had to be cut directly on the master. "Now sales reports, annual reports, sales letters, etc., can be illustrated with all types of photographs, half-tones and line drawings. Unlike the preparation of illustrations on photo offset masters, this electronic process uses no camera, no dark room, no chemicals or trays. The unit fits on a regular office desk and does the job automatically."

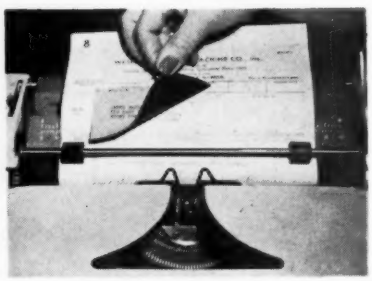
Companion to the Gestefax is the Gestetner "300" series stencil duplicators, a group which includes both electric and hand-operated machines. These machines, the company claims, combine the simplicity and low cost of the stencil duplicating process without the chemistry and skill required for offset. They embody the basic units of printing, reportedly: dual cylinders, oscillating waver rollers and paste ink. The ink is available in a collapsible tube which offers a clean operation eliminating ink cans, brushes and pads. Feeding unit is a floating, self-balancing mechanism sufficiently sensitive to select one sheet at a time regardless of the weight of the stock.

American Office Equipment Co., 24 E. 21st St., New York 10, offers a line of "Ideal" stencil duplicators. The Model E model is electrically operated with a cartridge ink feeding system. The ink is applied to the cylinders from a sealed cartridge of paste ink; the operator, reportedly, need never come in contact with the ink supply. The motor

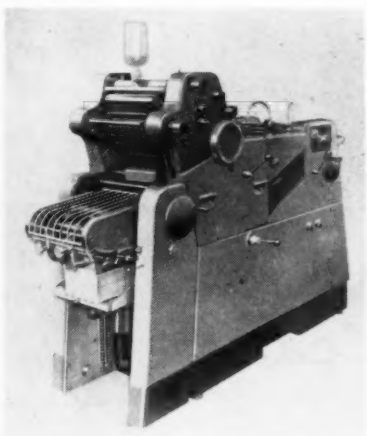


American Office Equipment Company's Model E duplicator.

Gestetner's stencil duplicator.



New shipping stencil by Weber.



ATF's Chief 15 offset machine.

unit is an AC/DC Universal type motor with variable speed adjustments from 40 to 140 copies per minute. Standard equipment includes: an on and off switch to print copies; automatic paper centering with one knob control; automatic cut-off system when the machine runs out of paper; single knob control for margin adjustment and up and down adjustment; paper bail; dust cover.

Model F is basically the same build as the Model E with the exception of the electric operation. It is manually operated with the same cartridge ink feeding system as the Model E machine. Machine also features automatic paper centering with one knob control; single knob controls for raising and lowering the print; single knob control for margin adjustments; paper bail; dust cover.

Model G is manually operated as is the Model F, with the exception of the automatic inking device—Model G is manually inked from a tube. Other features are the same as the Model F.

American Type Founders, 200 Elmora Ave., Elizabeth, N. J., offers the Chief 15 offset Duplicator, which stresses simplicity of operation.

A. B. Dick has developed a new "master-imaging" process which is up to eight times faster, reportedly, and substantially lower in cost than existing methods. The new method (A. B. Dick Patent Nos. 2,769,391 and 2,808,777) employ a specially developed A. B. Dick master for the fluid duplicating process which can be imaged by conventional neat-transfer office copying equipment in four seconds.

According to the firm, any number of masters can be imaged from each suitably printed, typed, written or drawn original, and up to 50 copies can be produced from each master in no more than 30 seconds with a fluid duplicator.

A. B. Dick's automated offset duplicators are being successfully used by printers and banks to encode bank checks magnetically with MICR (Magnetic Ink Character Recognition) characters to be read by the new electronic sorting and document handling equipment. While developed initially for magnetic ink imprinting for the bank-

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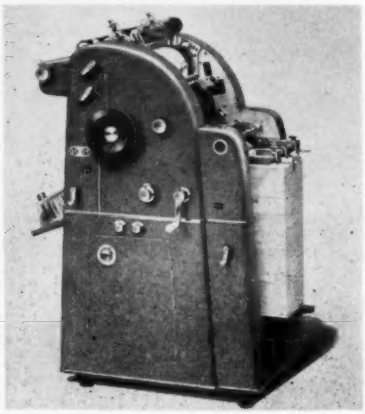
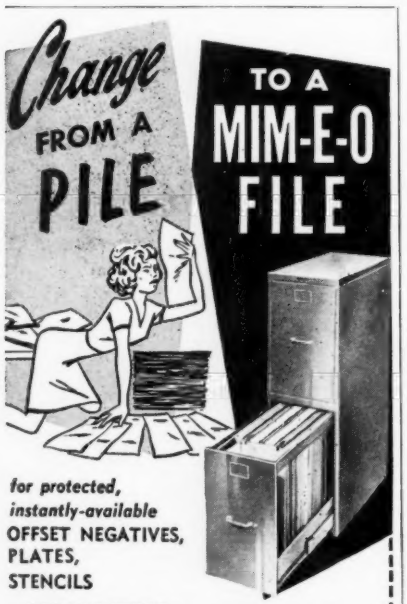


A. B. Dick's Model 360 offset machine



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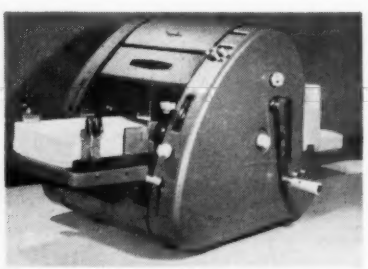
ing industry, A. B. Dick automated offset duplicators will be used to encode office papers which will be processed on high speed reading and sorting equipment.

Time payment coupons, invoicing papers, inventory control cards, premium coupons, payroll accounting forms and utility billing and meter reading cards are but a few of the applications which can be duplicated on A. B. Dick equipment. Other A. B. Dick automated offset duplicators are contributing to increased office efficiency by reproducing systems paperwork, quickly, easily, and at low cost.

The new table-top model combines, reportedly, compactness, high quality copies, and low cost. Exclusive Aquamatic moistening system to maintain proper water-ink balance is standard on all models, and all offer "fast set-up and change-over from one job to another—without tools." Chrome plated cylinders are standard on regular models. Cylinders are self-adjusting to different thicknesses of masters or plates and impression papers—with no adjustments required. Positive direct vacuum feed—paper travels less than five inches to the cylinder grippers – registration is accurate. Firm also has automated models for systems paperwork production which reduce manual operations from seven to two on repetitive duplicating runs. Automated models for magnetic ink imprinting on bank checks or other business papers for fast electronic document reading and handling equipment are also offered by firm.



Addo-X Roneo 750 stencil device.

The Manufacturers

Stencil

Addo-X Inc., 300 Park Ave., New York 22. Addo-X offers the Roneo line of stencil duplicators, which includes three electric and three manual models. Maximum size of printing area ranges from 8 by 14 inches to 13 by 17 inches, depending on the model. Price range: $230 to $1,250. In addition, Addo-X offers the Roneotronic process, available to users of Roneo machines, through Roneo dealers. This process is used to make stencils electronically, and can reproduce, on stencils, photographs, half-screens, etc. (Additional information mentioned previously). **T-1**

Bohn Duplicator Corp., 444 Park Ave. South, New York 16. Bohn's BDC Rex Rotary line includes one electric and three manual machines, all capable of printing a maximum area of 7½ by 14 inches. Machines are of the twin cylinder silk screen type, and use a cartridge ink supply. Numerous printing colors are available, and printing color can be changed rapidly. Feeding and receiving trays close to form self-contained case. Price range: approximately $179.50 to $345. **T-2**

The Dansen Co., Inc., Box 556, 101 Cooper Ave., No., St. Cloud, Minn. The Dansen Dynagraph is a

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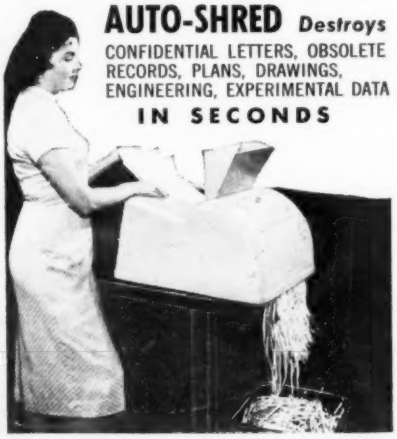

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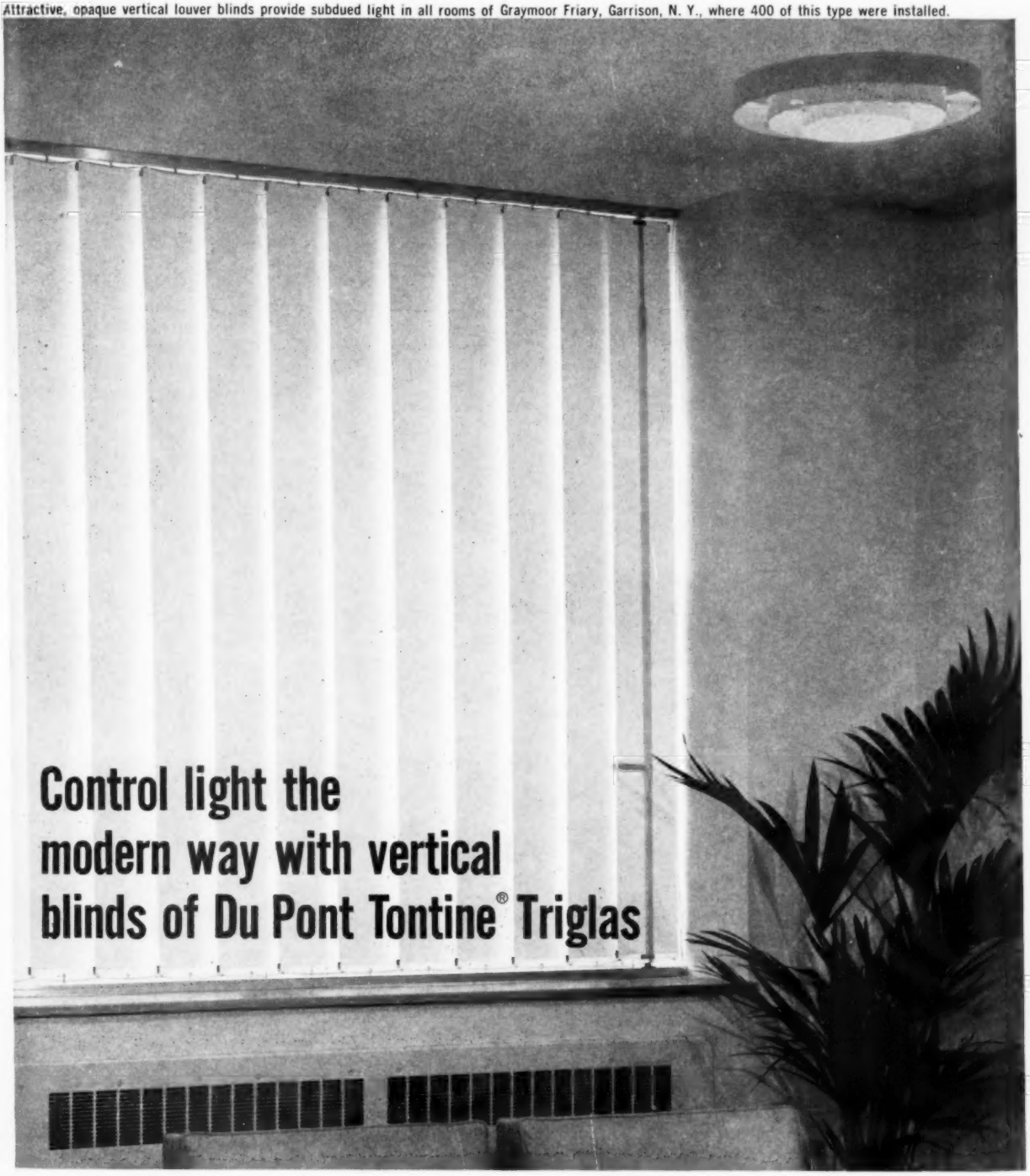

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City_____ Zone____ State_____

(Circle No. 56 on Reader Inquiry Card)

manual machine, capable of printing a maximum area of 7½ by 10¼ inches. Price $39.50. **T-3**

A. B. Dick Co., 5700 W. Touhy Ave., Chicago 31. Dick's Mimeograph line includes six electric and five manual models, all of which will print areas to a maximum size of 7⅝ by 14 inches. Features include automatic inking (and up to 20,000 copies from one inking), automatic feed, pin-point registration, and stencils which require no cushions. **T-4**

DuPrints, Inc., 1502 S. Main St., Los Angeles 15. DuPrints offers the Dupli-roto line, consisting of one electric and one manual model, both of which will print a maximum area of 9 by 14 inches. Prices: about $495 and $695. **T-5**

Gestetner Duplicator Corp., 216 Lake Ave., Yonkers, N. Y. Gestetner offers a line of both manual and electric stencil duplicators of the twin-cylinder, silk screen type, using paste ink. The smallest model will print copy up to a maximum size of 8⅜ by 13½ inches; the largest model has a maximum printing area of 13½ by 16½ inches. Among the features offered are automatic feed, automatic inking, automatic shut-off, and color change equipment. Price range: approximately $240 to $1,298. Gestetner also offers the Gestefax, an electronic-scanning stencil cutter, described in the "Facsimile" section of this department. Gestetner also has new stencil duplicators, the "300 Series." **T-6**

Milo Harding Co., 500 S. Monterey Pass Road, Monterey Park, Calif. This company offers four electric and two manual machines, all capable of printing copy up to a maximum size of 8½ by 13½ inches. Machines are of the two-cylinder type, with a plastic carrier screen, and use paste or liquid ink. Among the features offered are a built-in interleaver-collator, accurate registration for second color re-runs, automatic feed, etc. Price range: approximately $199 to $1,995. **T-7**

The Heyer Corp., 1850 S. Kostner Ave., Chicago 23. Heyer Letter-graph machines are offered in four manual models, with maximum printing area ranging from 7¼ by 10½ inches to 8½ by 14 inches. The company offers changeable super-pads, for rapid color changes. Price range: approximately $36.57 to $94.87. **T-8**

Marr Duplicator Co., Inc., 53 Park Place, New York 7. The Marr line comprises three electric and two manual machines, all of which can print copy to a maximum size of 7½ by 15 inches. Machines feature automatic count of printed sheets only, accurate registration for re-runs, automatic paper alignment, automatic roller release, etc. Price range: approximately $97.50 to $950. **T-9**

Mercury Business Machines Co., Inc., 900 Broadway, New York 3. Firm has Roto line, which includes two electric and two manual models. Maximum printing size is 8½ by 14 inches. Price range is from about $199.75 to $665. **T-10**

The Multistamp Co., P. O. Box 1249, Norfolk 1, Virginia. The Multistamp line comprises five manual duplicators of the small hand stamp or rocker type. Maximum size of printed area ranges from 3¼ by ⅞ inches to 7⅜ by 10-5/16 inches. The smaller models are designed for use in direct imprinting on cartons and boxes, or labels and tags. Price range: about $9.50 to $44.50. **T-11**

The Print-O-Matic Co., Inc., 724 W. Washington Blvd., Chicago 6. Print-O-Matic offers a line of stencil duplicators, including both electric and manual models, and a card-size duplicator. **T-12**

Rex-Rotary Distributing Corp., 387 Park Ave. South, New York 16. The Rex-Rotary line includes five electric and four manual machines. Maximum size of printed area ranges from 8½ by 13 inches to 13½ by 17 inches. The company offers a new lever assembly which makes possible the use of letter, legal or memo-size stencils without masking. The impression roller can be removed rapidly and replaced with a narrow impression roller for printing of narrow paper or postcards. Price range: approximately $207.40 to $980.50. **T-13**

Speed-O-Matic Co., 7640 W. Norton Ave., Hollywood 46, Calif. This company offers the Speed-O-Matic postal card stencil duplicator in one manual model, capable of printing in sizes from 35 by 5 inches to 4 by 6 inches. Machine features automatic feed, and impression roller adjustment. **T-14**

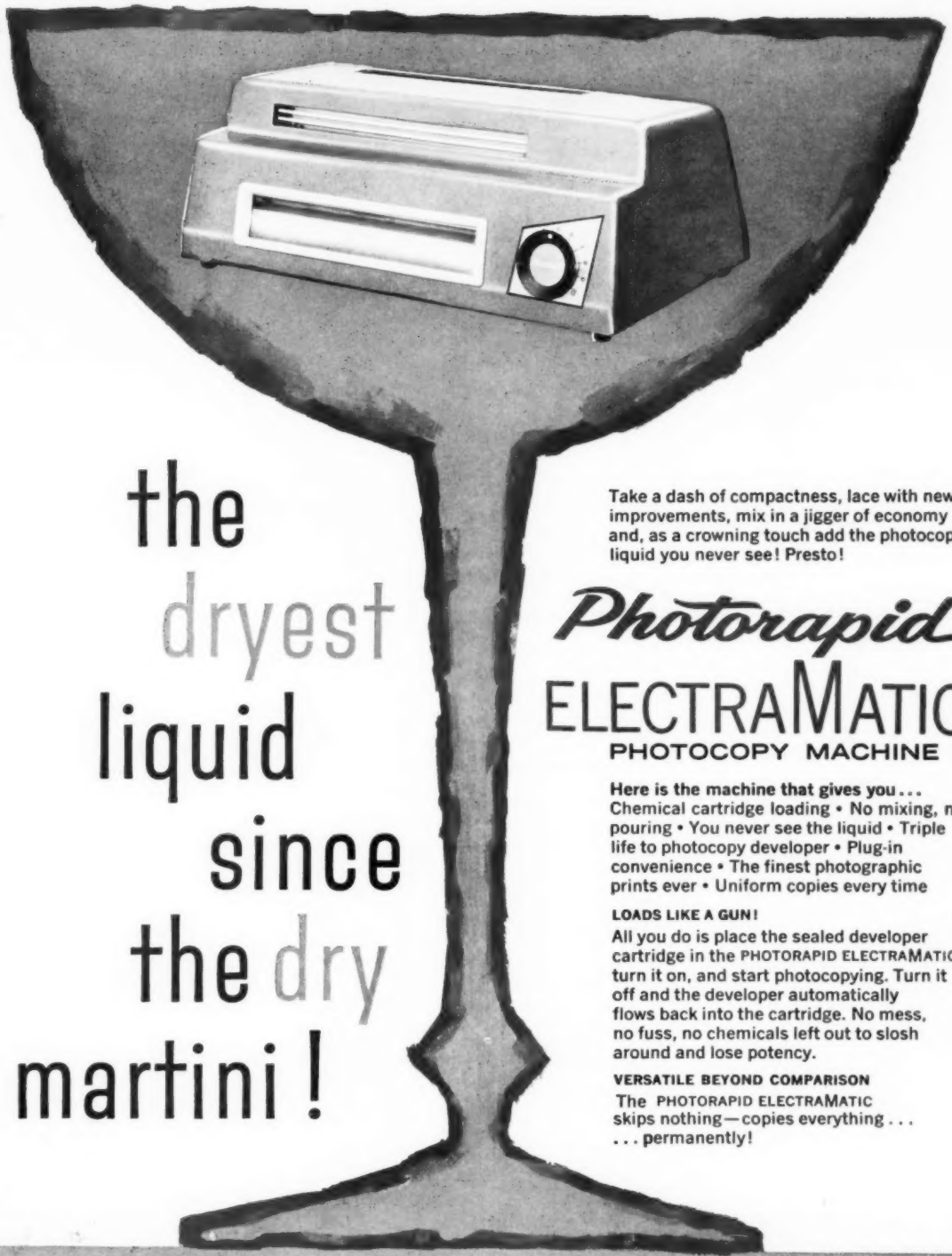
Vari-Color Duplicator Co., 435 S. Lincoln, Shawnee, Okla. The Vari-Color line comprises four manual machines, with maximum printing area sizes ranging from 3½ by 5¼ inches to 8½ by 14 inches. Features available include automatic feeding and inking, and accurate registration for returns. Price range: about $15.95 to $99.50. **T-15**

Weber Marking Systems, Div. of Weber Addressing Machine Co., Inc., Weber Industrial Park, Mt. Prospect, Ill. Weber offers two electric and two manual label printing machines, and twelve handprinters. Maximum copy sizes range from ⅞ by 2¾ inches to 3 by 7 inches. The label printing machines automatically feed stock in paper rolls, count, cut to size desired, and stack. Label printing machines can convert to rubber plate printing. (Additional information mentioned previously.) **T-16**

Wolber Duplicator & Supply Co., 1201 Cortland St., Chicago 14. Wolber offers one Copy-Rite stencil duplicator, a manual machine which will print copy to a maximum size of 9 by 14 inches. Features include four-digit counter which registers only printed copies, adjustable stacking guides, automatic pressure roller release. Price: about $158.47. Firm also has new model called Copyrite Golden Streak which provides two ways of moistening the copy paper—roller or wick. (Additional information mentioned previously). **T-17**

Offset

Addressograph-Multigraph Corp., 1200 Babbitt Rd., Cleveland 17. Addressograph-Multigraph's Multilith offset machines (not to be confused with the company's Multigraph relief machines which are described in the Relief Process section of this department) are available in eight models, all electrically powered. Maximum printed copy size ranges from 9¾ to 17 inches by 19½ inches. Any number of printing colors are available, and on two-headed duplicators, two colors can be run at once. Among features



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Here is the machine that gives you...
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All you do is place the sealed developer cartridge in the PHOTORAPID ELECTRAMATIC, turn it on, and start photocopying. Turn it off and the developer automatically flows back into the cartridge. No mess, no fuss, no chemicals left out to slosh around and lose potency.

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offered are automated feed, double-sheet eliminators, automatic blankets cleaning, etc. **T-18**

Davidson Corp. (Subsidiary of Mergenthaler Linotype Co.), 29 Ryerson St., Brooklyn 5, N. Y., Davidson offers the Dual Lith line of offset presses and the Dav-A-Matic line of offset duplicators. The Dual Lith line includes ten electrically powered models, with maximum printing sizes ranging from 10 to 14 inches to 14 by 17½ inches, depending on the model. Features offered include automatic feed, delivery, inking, sheet detection, etc. Dual Lith price range: $3,100 to $5,200. The Dav-A-Matic line includes eight electrically powered models, all of which will print copy to a maximum size of 13¼ by 10¼ inches. Eight automatic features are offered, including feed, blanket cleaning, facilities for numbering and perforating, etc., depending on the model. Dav-A-Matic price rance: approximately $1,600 to $2,500. **T-19**

A. B. Dick Co., 5700 W. Touhy Ave., Chicago 31. Dick offers two offset duplicators for general offset work, and five automated offset duplicators, intended especially for highly repetitive systems paperwork. Both types are designed to operate at speeds up to 9,000 copies per hour. Maximum printing area size for both automated and regular models ranges from 9½ by 13 inches to 10½ by 16½ inches. Features include Aquamatic control for assuring the proper balance between ink and fountain solution, machine cycle and copy count control for routine or specialized duplicating. Machines can use new magnetic ink, which can be read by electronic sorting equipment. **T-20**

Gevaert Co. of America, Inc., 321 W. 54th St., New York 19. Firm recently introduced an aluminum printing plate that can be prepared in less than one minute for offset duplication of optically reduced or enlarged images. The new plate, known as the "Gevacopy Rapid Aluminum Offset Plate" is based on a certain process by which photographic material is exposed to art or documents. An image is developed and then physically transferred to the surface of an aluminum offset plate in seconds. **T-21**

M. P. Goodkin Co., 112 Arlington St., Newark 2. Firm has new camera called Goodkin Vertical "SS" designed for use with Ektalith and Gevacopy processes. **T-22**

Photostat Corp., 1001 Jefferson Rd., Rochester 23, N. Y. Photostat offers the Photostat Masterlith offset duplicator, available with three different receiving mechanisms and various special-purpose attachments. Paper to be printed may vary in size from 3 by 3 inches to 11 by 15½ inches; printed image may vary from a dot to a maximum size of 9⅞ by 13 5/16 inches. Operating speed is variable, from 3,400 to 7,200 sheets per hour. Features include simplified controls, gripper control of paper throughout printing cycle, extra feed lever at receiver, variable gripper mechanism, removable ink unit. Price: about $3,336. **T-23**

Spirit

Bankers & Merchants, Inc., 4410 N. Ravenswood Ave., Chicago 40. Firm offers Faymus manual dupli-

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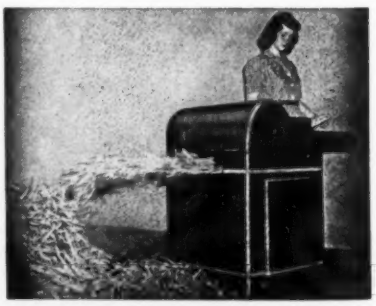

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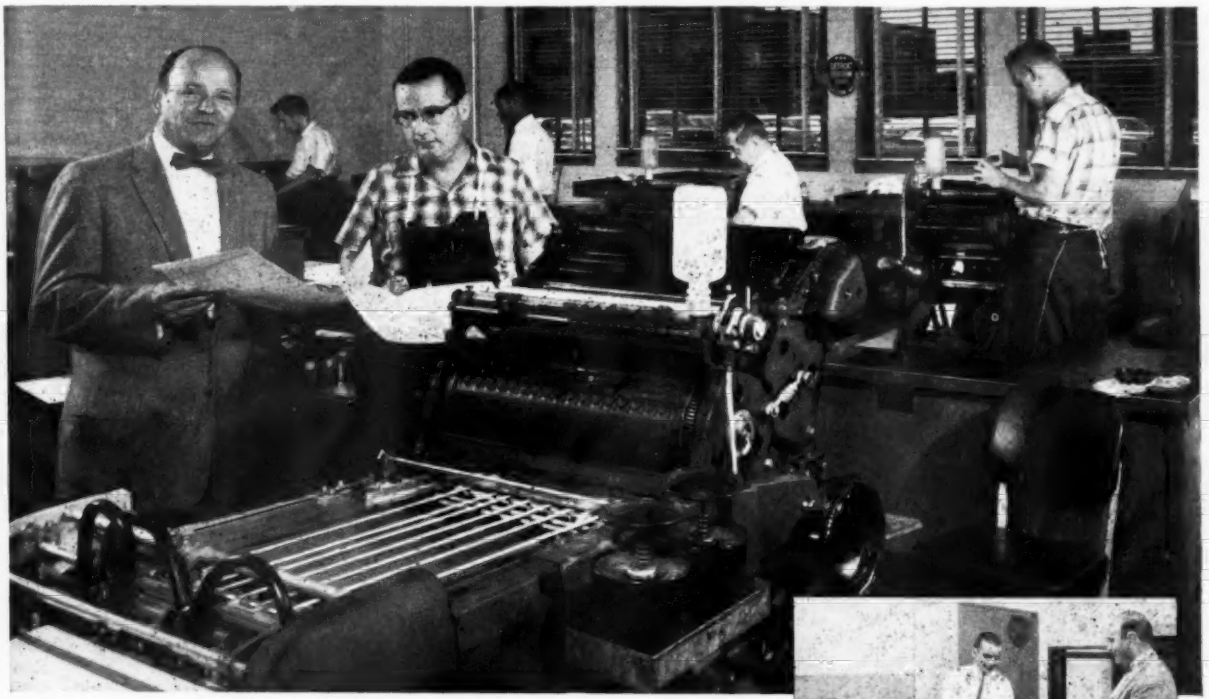

Cost of making 500 masters per month reduced nearly 50% with new Kodak Ektalith Method.

Kodak Ektalith Processor, Model 20 (to left in background) teams up with darkroom camera.

Detroit Edison Company gets high quality for short runs by installing $875 Kodak Ektalith Processor in Copying Service Section.

A welcome addition to Detroit Edison's darkroom is the new Kodak Ektalith Processor, Model 20. This unit, in combination with camera, produces offset paper masters (for reduced, enlarged, or same-size copies) in 3 fast, easy steps:

Just expose . . . process . . . transfer . . . and the plate is ready for the duplicator at a fraction of the former cost and time for camera-produced metal plates. In fact, an average of 2½ hours is saved on each job! Total savings are estimated at $2.65 per plate.

Kodak Ektalith-made plates reproduce solids without mottling . . . all but end need for plate clean-up work. They have proved highly satisfactory for 500 or so of the short-run orders that are handled monthly at Detroit Edison. *Variety of work* includes: wiring diagrams, construction schedules, organization charts, punch-card machine tabulations, company literature, newsletters, and bulletins.

Free booklet gives details on versatile Kodak Ektalith Method and Ektalith units designed for office and darkroom. If you are looking for ways to improve business communications it will pay you to call your local Kodak Ektalith Dealer or write Eastman Kodak Company, Photo Reproduction Products Div., Rochester 4, N.Y.

Price is list and subject to change without notice.

KODAK **Ektalith** METHOD ***...puts you ahead in offset duplicating***

Kodak TRADE MARK

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cator. Maximum size of printed area is 8½ by 11 inches. Price: $88. **T-24**

Bohn Duplicator Co., 444 Park Ave. South, N. Y. 16. Bohn offers BDC Rex Rotary, available in one electric and one manually powered model. Maximum size of printed area is 8 by 14 inches. Masters may be prepared by typing or drawing. Features include automatic master clamp and trays which close to form self-contained case. **T-25**

Copy-Craft, Inc., 105 Chambers St., New York 7. Copy-Craft offers the Ormig line, which includes both straight duplicators and electronic selective data duplicators. Straight duplicators include six electric and three manual models; selective data duplicators include seven electric and one manual model. Maximum copy size ranges from 9 by 14 to 14 by 17 inches, depending on the type of machine and model. Straight duplicators offer such features as automatic clamping device, direct wick moistening device, adjustable pressure control, four-digit counter, separate addressing device, etc. Line includes a systems model which features seated position for operator, front return of copies, etc. Price range for straight duplicators: $75 to $1,105. Selective data duplicators are made in various models designed to perform specific tasks. The line selection machine permits printing, from one master, without masks, blockouts, second masters, or shingled forms: variable headings, fixed headings, and 1, 2, or 3 selected lines, condensing the data onto a smaller form if desired. Column eliminating and shifting machine will print from one master, without masks, etc.: all or part of the heading, and 1, 2, or 3 adjacent columns, condensing the data onto a smaller form where desired. Price range for selective data duplicators: approximately $840 to $7,695. **T-26**

Copy-Plus, Inc., 2817 W. Carmen Ave., Milwaukee 9. Copy-Plus offers four electric and eight manual machines. Pacesetter, Curvette, and Unigraph models can print a maximum copy area of 9 by 17 inches. The Ambassador models can print a maximum area of 14 by 17 inches. Masters can be typed, written, or drawn. Price range: approximately $146.48 to $469.48. Additional information was unavailable at press-time. **T-27**

A. B. Dick Co., 5700 W. Touhy Ave., Chicago 31. Dick offers four electric and two manual spirit duplicators which can be used interchangeably with the Azograph process, described in the "Special Liquid" section. Maximum printing areas range from 9 by 14½ inches to 11 by 14½ inches, depending on the model. Masters may be prepared using ball-point pen, typewriter, stylus, printing press, addressograph, or tabulator. Features include automatic single sheet feeding system, continuous or intermittent cylinder cycling, adjustable impression roller, etc. **T-28**

Ditto, Inc., 6800 McCormick Rd., Chicago 45. Ditto offers five electric and four manual spirit duplicators. Maximum printing areas range from 8½ by 13⅝ inches to 17½ by 13¾ inches, depending on the model. Masters may be prepared using stylus, pen, pencil, typewriter, or tabulator. Some machines feature

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automatic feed, counting, etc. Price range: $187.25 to $1,325.93. Ditto has also recently introduced the new Ditto Masterfax machine which performs four office functions: (1) It will make direct (spirit) process masters; (2) It will make offset masters; (3) It will make facsimile copies; and (4) It laminates. **T-29**

Duplicopy Co., 224 W. Illinois St., Chicago 10. Firm offers Duplicopy line of spirit duplicators with three manually powered models. Maximum printing size ranges from 4 by 7 inches to 8½ by 14 inches. Price range: approximately $129.50 to $192. **T-30**

DuPrints, Inc., 1502 S. Main St., Los Angeles 15. DuPrints offers the Duplicarbo line of spirit duplicators, including five electric and five manual machines. Maximum printing size ranges from 9 by 14 inches to 19 by 28 inches, depending on the model. The largest size is said to be useful for shipping firms, freight forwarders, exporters, etc. Price range: $169.47 to $995. Firm also offers Windsor spirit duplicators which are made in Italy with price range of about from $180.27 to $418.70. **T-31**

The Heyer Corp., 1850 S. Kostner Ave., Chicago 23. Heyer offers the Conqueror line, including two electric and one manual models. Maximum printing size for all models is 9 by 14 inches. Features include automatic start and stop on electric models; masters can be filed and re-used, and information can be added to master for future runs; adjustable feed wheels which grip paper at outer edge, feed-tension control, direct gear-drive counter, etc. Price range: approximately $227.39 to $343.97. **T-32**

Master Addresser Co., 6500 W. Lake St., Minneapolis 26. This company offers the Master Portable Duplicator, available in two manually operated models. Maximum size of printed area is 8½ by 11 or 14 inches. **T-33**

Old Town Corp., 750 Pacific St., Brooklyn, N. Y. Old Town line includes two manual and two electric models. Maximum copy size ranges from 9 by 17 inches to 18 by 17 inches. Price range: approximately $226 to $650. **T-34**

Rex-O-graph Div., General Binding Corp., 1101 Skokie Highway, Northbrook, Ill. The Rex-O-graph line includes four electric and three manual machines. Maximum copy size ranges from 9 by 17 inches to 14 by 17 inches, depending on the model. Price range: approximately $209.88 to $1,038.80. **T-35**

Rex-Rotary Distributing Corp., 387 Park Ave. South, N. Y. Rex-Rotary offers the Fordigraph line, consisting of two manual models, with maximum printing size of 8½ by 14 inches. The machines are portable, equipped with handles; feeding and receiving trays fold up to close the machine. Features include automatic paper feed, resettable copy counter, automatic master-clamp, etc. **T-36**

Speedliner Co., 4404 N. Ravenswood Ave., Chicago 40. Speedliner offers one manual machine which prints to a maximum size of 9 by 14 inches. Price: about $89. **T-37**

Standard Duplicating Machines Corp., 1935 Revere Beach Blvd., Everett 49, Mass. Standard offers the Starline series of duplicators, capable of handling copy ranging from small finance coupons to 13 by 14-inch sheets. Depending on the model, features include: electronic feed, designed to insure exact regis-

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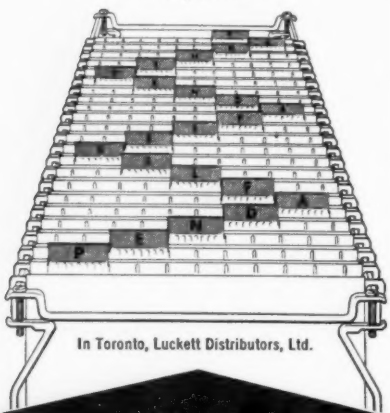

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tration where hand-feeding and speed are desired; automatic feed, which handles 16, 20, 24 lb. paper stock or duplicator card and tag stock; electric foot switch for automatic operation; "lazy-suzan" feature where variable working positions are desired. **T-38**

Vari-Color Duplicator Co., 435 S. Lincoln, Shawnee, Okla. Two manual spirit duplicators are offered, both printing copy to a maximum size of 8½ by 14 inches. Machines feature automatic feeding and inking. **T-39**

Wolber Duplicator & Supply Co., 1201 Cortland St., Chicago 14. The Copy-Rite line of spirit duplicators consists of one electric and one manual machine, both printing copy to a maximum size of 9 by 14 inches. Features available include automatic fluid control, five position color control, single control action, which starts current, activates fluid flow and sets rollers in operation, automatic shut-off, and "Margi-Set," which can raise or lower copy during operation. **T-40**

Relief

Addressograph-Multigraph Corp., 1200 Babbitt Rd., Cleveland 17. The Addressograph line of Multigraph machines (as distinguished from the company's Multilith machines, which operate on the offset principle and are described in that section of this department), consists of 12 electrically powered and three manually operated models. Maximum sizes of printed area range from 8 by 12½ inches to 16 by 21 inches, depending on the model. Masters may be prepared from loose type, or by electrotype or stereotype. An unlimited number of printing colors are available, any two of which may be run at the same time on a two-headed machine. Features available include a signature attachment, a numbering attachment, perforating, scoring, slitting, etc. Price range: approximately $310 to $3,185. **T-41**

Davidson Corp. (Subsidiary of Mergenthaler Linotype Co.), 29 Ryerson St., Brooklyn 5, N. Y. Davidson offers the Dual Lith line, which includes models that can be

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used for letterpress, as well as for offset work. The line includes ten electrically powered models, with maximum printing sizes ranging from 10 by 14 inches to 14 by 17½ inches, depending on the model. Features offered include automatic feed, delivery, inking, sheet detection, etc. Price range: approximately $3,100 to $5,200. **T-42**

A. Kimball Co., Rewe St., Brooklyn 11, N. Y. Kimball's Roto Kimco line includes three basic rotary-type models, which may be electrically or manually operated. Machines print from type or logo (rubber or metal, rubber mats or electros). Maximum size of printed area is 4⅜ inches by 2⅜, or by 4¾, or by 6 5/16 inches, depending on the model. Features include automatic feed and registration for reruns. Prices: $750, $850, and $950. **T-43**

Weber Marketing Systems, Div. of Weber Addressing Machine Co., Inc., Weber Industrial Park, Mt. Prospect, Ill. Weber offers rubber plate label printing machines which will print copy in sizes from ½ by 2 inches to 4⅛ by 6 inches, at the rate of 105 per minute. The machines use pressure-sensitive rubber type which can be changed according to the variable information desired, and re-used indefinitely. Machines can convert to stencil printing (see "Stencil section). Machines can automatically feed stock in paper rolls, count, cut to desired size and stack. **T-44**

Gelatin

Columbia Ribbon & Carbon Mfg. Co., Inc., Herbhill Rd., Glen Cove, L. I., N. Y. The Columbia No. 1 Duplicator is a simple machine, of the flat bed type, manually operated. The gelatin roll accommodates five consecutive master copies, size 8½ by 11 inches. Price of machine: $28; roll: $4.41. **T-45**

The Heyer Corp., 1850 S. Kostner Ave., Chicago 23. The Heyer line comprises eleven manually operated models, which print in maximum sizes ranging from 6 by 10½ inches to 15 by 18 inches, depending on the model. Printing colors available are purple, red, blue, green, black. Price range: approximately $2.75 to $39.50. **T-46**

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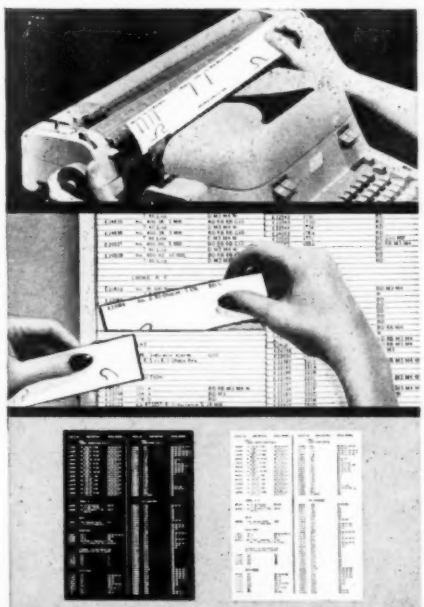

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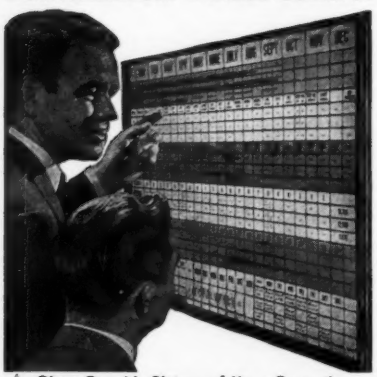

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A. B. Dick Co., 5700 Touhy Ave., Chicago 31. The Azograph line includes four electric and two manually powered models, any of which can also be used for spirit process duplicating. Maximum printing area ranges from 9 by 14½ to 11 by 14½ inches, depending on the model. Masters may be prepared using ball-point pen, typewriter, stylus, printing press, addressograph and tabulator. Features include automatic single sheet feeding system which feeds paper of substance 16 to 20 and card stock down to and including the last sheet; continuous on intermittent cylinder cycling, adjustable impression roller, etc. **T-47**

Duplicating Supplies

ABC Ribbon & Carbon Corp., 321 Broadway, New York.

Ace Duplicating Supply Co., Inc., 2616 Sunset Blvd., Los Angeles 26.

Addo-X Inc., 300 Park Ave., New York.

Addressograph-Multigraph Corp., 1200 Babbitt Road, Cleveland 17.

Allied Carbon & Ribbon Mfg. Corp., 165 Duane St., New York 13.

American Stencil Mfg. Co., 2714 Walnut St., Denver 5.

American Type Founders Co., 200 Elmora Ave., Elizabeth, N. J.

Bainbridge, Kimpton & Haupt, Inc., 218 Greenwich St., New York 7.

Bankers & Merchants, Inc., 3200 N. Sheffield, Chicago.

Bohn Duplicator Corp., 444 Park Ave. South, New York.

Borroughs Mfg. Co., 3002 N. Burdick, Kalamazoo, Michigan.

Carpenter Mfg. Co., 260 Bradley St., Somerville 45, Mass.

Carteret Printing Co., 480 Canal St., New York.

The Carter's Ink Co., 239 First St., Cambridge 42, Mass.

Codo Mfg. Co., Leetsdale, Pa.

Cole Steel Equipment Co., 415 Madison Ave., New York.

Colonial Carbon Co., 8110 St. Louis, Skokie, Illinois.

Columbia Ribbon and Carbon Mfg. Co., 551 Herb Hill Road, Glen Cove, New York.

Colwell Litho Products, Inc., 316 Chicago Ave., Minneapolis, Minn.

Copease Corp., 425 Park Ave., New York.

Copy-Craft, Inc., 105 Chambers St., New York 7.

Copy Plus Inc., 2817 W. Carmen, Milwaukee, Wisc.

Copymation, Inc., 5650 N. Western Ave., Chicago 45.

Davidson Corp., c/o Mergenthaler Linotype Co., 29 Ryerson St., Brooklyn, New York.

A. B. Dick Co., 5700 Touhy Ave., Chicago 31.

Ditto, Inc., 6800 McCormick Road, Chicago 45.

Duplicators, Inc., 200 East 72nd St., New York 21.

Duplicopy Co., 224 W. Illinois St., Chicago 10.

Du Prints, Inc., 1502 S. Main St., Los Angeles 15.

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Franklin Ribbon & Carbon Co., 172-8 Nassau St., Brooklyn 1, N. Y.
General Binding Co., Rex-O-Graph Div., 1101 Skokie Highway, Northbrook, Ill.
General Photo Products Co., 15 Summit Ave., Chatham, N. J.
Graphic Duplicator Co., 125 Fenimore Road, Mamaroneck, N. Y.
Milo Harding Co., 500 S. Monterey Pass Road, Monterey Park, Cal.
Hart Mfg. Co., 2400 Endicott St., St. Paul, Minn.
Hecto Products, Inc., 110 W. 17th St., New York 11.
Henko Supply Co., 546 Pine St., Elizabeth, N. J.
Heyer, Inc., 1950 S. Kostner Ave., Chicago 23.
Impoil Co., Inc. (Formerly Federal Mining & Mfg. Co.), 222 Kearney Ave., Jersey City 4, N. J.
Interchemical Corp., Cotan Div., 341 Oliver St., Newark, N. J.
Jakiela Products, 2644 N. Western Ave., Chicago 47.
Kee Lox Mfg. Co., 100 Kee Lox Place, Rochester 1, N. Y.
Kores Carbon Paper & Ribbon Corp., 701 Whittier St., New York.
Krayer Mfg. Co., 542-548 Pem St., Elizabeth 1, N. J.
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Master Addresser Co., 6500 W. Lake, Minneapolis 16, Minn.
Mercury Business Machines Co., Inc., 900 Broadway, New York 3.
Mimeo Mfg. Co., Inc., 401 Broadway, New York 13.
Mutual Engineering & Mfg. Co., 1124 E. 108th St., Los Angeles 59.
National Business Forms Assoc., 207 E. Brownard Blvd., Fort Lauderdale, Fla.
Old Town Corporation, 750 Pacific St., Brooklyn 38, N. Y.
Peerless-Imperial Co., Inc., 28 Peerless Place, Newark 5, N. J.
Peerless Ink Corp., 258 Broadway, New York 7.
Pekas Duplicator Co., Lock Box 33, Lesterville, S. D.
Polychrome Corp., 2 Ashburton Ave., Yonkers 2, N. Y.
Print-O-Matic Co., 724 W. Washington Blvd., Chicago 6.
Queen Ribbon & Carbon Co., 101-02 37th Ave., Corona, N. Y.
Repeat-O-Type Stencil Mfg. Co., Inc., 153-157 Coffey St., Brooklyn 31, N. Y.
Rex-O-Graph, Inc. (Subsidiary of General Binding Corp.), 1101 Skokie Highway, Northbrook, Ill.
Rex-Rotary Distributing Co., 387 Park Ave. South, New York 16.
Rose Carbon & Ribbon Co., 1000 South 4th St., Harrison, N. J.
S. & M. Distributing Co., 3875 Garland, Wheat Ridge, Colo.
Speedliner Duplicator Co., 4404 N. Ravenswood Ave., Chicago 40.
Speed-O-Print Corp., 1801 W. Larchmont Ave., Chicago.
S. S. Stafford, Inc., 609 Washington St., New York 14.
Stationers' Guild of American, 1421 Chestnut St., Philadelphia 2.
Underwood Corp., 1 Park Ave., New York 16.
Weber Addressing Machine Co., 215 E. Prospect Ave., Mt. Prospect., Ill.
F. S. Webster Co., 1-23 Amherst St., Cambridge 42, Mass.
Wolber Duplicator & Supply Co., 1201 Cortland St., Chicago 14.

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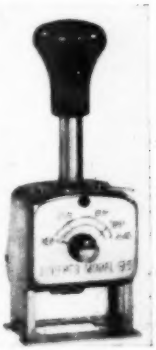

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Model 90. You dial the action wanted (up to 13) on outer circle. Inner circle tells number of impressions run off. Also 3 standard movements. Write Roberts Numbering Machine Division, Heller Roberts Mfg. Corp., 700 Jamaica Ave., Brooklyn 8, N. Y.

HELLER ROBERTS
Manufacturing Corporation
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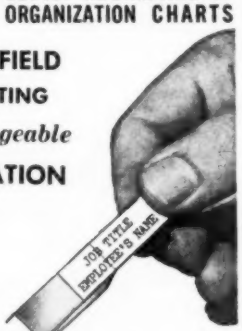

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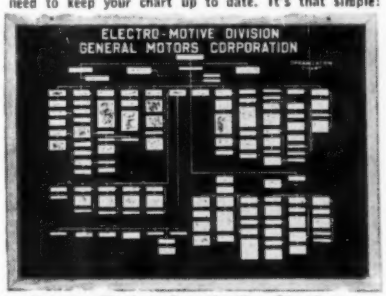

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(Circle No. 6 on Reader Inquiry Card)

Tips for the Office

Your secretary can aid in correspondence

You can reasonably expect your secretary to take the following steps to help you with your everyday correspondence problems:

1. Open and read all mail except that which is marked confidential or personal.

2. Check carefully to see if all enclosures mentioned were received, make a notation on the letter if an enclosure is missing, and attach enclosures to letters with paper clips.

3. Compare return addresses on letters with those on envelopes, complete incomplete inside addresses before disposing of the envelope, and attach incoming envelopes to letters if there is any reason to retain them. (Proof supplied by a postmark may be valuable in a dispute about such things as the expiration of a discount date or if an enclosed check fails to clear the bank.)

4. Secure from the files any previous correspondence that is referred to and any information that will be needed by the dictator before he can answer the letter.

5. Check all figures in letters received and attach a memo to any letter that contains an error in arithmetic.

6. Indicate, if the employer does not use a dictating machine, any constructions that seem to be incorrect, wordy, or awkward by underlining or encircling the shorthand outlines involved. At the conclusion of dictation, she should consult the dictator about making the change.

7. Proofread carefully while the outgoing letter is in the typewriter, and make any corrections needed before removing the letter from the machine.

8. Secure all enclosures mentioned and present them with the outgoing letters when ready for signing.

9. Call to the dictator's attention especially well written letters or passages from letters in the incoming mail.

10. Collect a folder of magazines and newspaper clippings about better writing techniques (she might begin with this article) and make the folder available to all those in your organization who are concerned with the production of business letters.—Homer L. Cox, "Coping With Correspondence," published by Sterling Publishing Co., Inc., New York.

Seven objectives of work improvement

Before an improvement in work techniques is established, it might be tested against the following seven criteria:

1. Will the idea reduce the cost of the operation?
2. Does it eliminate all unnecessary activities?
3. Does it increase the effectiveness of each activity?
4. Will it eliminate duplication of effort?
5. Does it make work safer and less fatiguing?

6. Is it expected to eliminate waste of time, energy, or material?
7. Will it improve service to customers?—Guy C. Close Jr., "Work Improvement," published by John Wiley & Sons, Inc., Philadelphia.

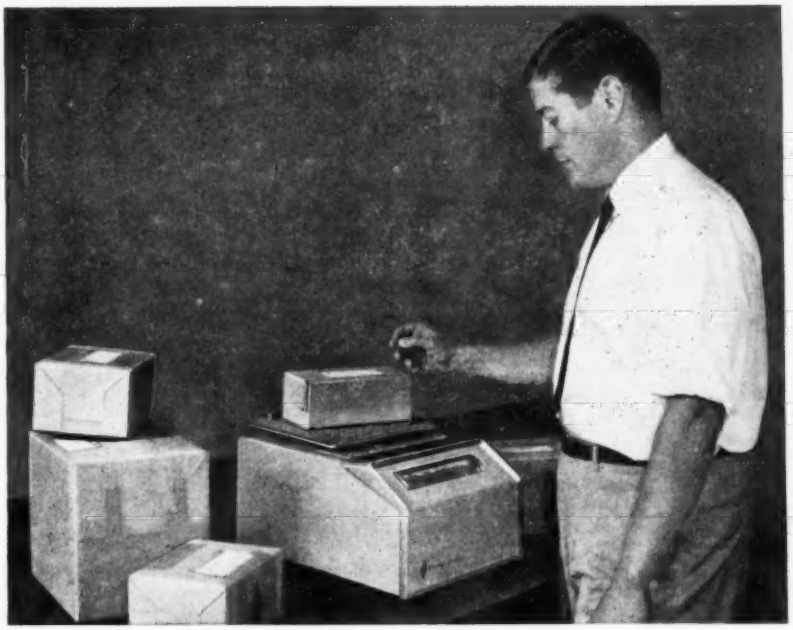
Growing paperwork costs

The Dartnell Corp., Chicago, has estimated that the average business letter costs $1.83 to produce. This includes materials and the labor costs of both dictator and stenographer. Now the company estimates that it costs at least $8 to write an invoice and $15 for a multi-part sales order set, including production and shipping papers. The average business, according to Dartnell, wastes 65 cents out of every dollar it spends on paper-work.

Overcome resistance

Resistance to change is as old as man. Almost all of us are guilty. Check these comments and your reaction to them if you feel you are an exception:

1. "But it won't work for us." (Perhaps not, but if you search hard enough you can always find excuses why it won't. Be sure you distinguish between a reason and an excuse.)
2. "We don't have it in the budget." (Budgets are guides to thoughtful action and are not intended as a means to put good ideas in the deep freeze.)
3. "But the old system is working OK." (This does not say the job cannot be done better, faster, or more economically.)
4. "Let's be realistic." (This implies that the speaker is a person with logical, well organized ideas while others may be dreamers.)
5. "Let's wait until after the holidays (or the election, the first of the year, or some other adequately remote point in time)." (Indulge in procrastination and ultimately you will come to the utter inability to make a decision of any kind.)
6. "But 'the art' is in such a state of flux—let's see what comes out next year." (This comment recognizes that we surely live in an age of progress, but can this man profit with the best that is available?)—Scriptomatic Newsletter, Scriptomatic, Inc., Philadelphia.



New, small parcel post scale computes postage!

The new Pitney-Bowes Model 3740, compact Parcel Post Scale with 40 lb. capacity, saves rate computing, postage errors, mailing time. The right postage for your packages—by surface or air parcel post in all zones—is shown in large, lighted, easily legible rate figures, widely spaced on the chart. Double gunsight lines insure selection of the proper rates, help prevent overpayment or underpayment.

Long-life accuracy has been built into this precision scale through these features: Sealed, pre-lubricated ball bearings keep friction to a minimum, plus special temperature compensating components. And advanced engineering assures exact rate readings regardless of the position of the package on the easy-loading curved platform. The scale action can be slowed or speeded by the operator.

With today's high time and postage costs, the 3740 soon pays its low cost for any parcel mailer. Ask the nearest Pitney-Bowes office to show you the PB line of parcel post and letter scales. Or send for free illustrated literature.

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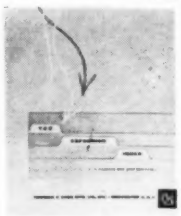
CATALOGS

Office leather accessories C-1

A & M Leatherlines Inc., 230 Fifth Ave., New York 1. A new loose leaf catalog features an entire line of leather goods for the office including leather desk accessories, brass desk accessories, smoking articles and telephone accessories. Prices are included.

Card filing system C-2



Yawman & Erbe Manufacturing Co., Inc., Rochester 3, N. Y. A new full-color brochure, "Expanding Index," describes card filing systems designed for an expanding business. The expanding index, an open notation system, is pictured with detailed instructions for its use. Also included are rules and charts for determining the size of indexing needed, the functions of component parts, and a list of types of companies that can use such card filing systems.

Temporary employees C-3

Employers Overload Co., Minneapolis 2, Minn., offers a booklet on the uses of its temporary employee services. The company specializes in office personnel such as secretaries, stenographers, typists, and accounting and office machine operators. Also described are the firm's promotional and marketing services.

Office partitions C-4

Unistrut Products Co., 933 W. Washington Blvd., Chicago 7, Ill. The new line of Color Line partitions is described in the company's Catalog #920. The catalog is, of course, printed in color to show how color can be integrated into the office through partitions. Examples of installations are shown.

Data collection system C-5

K.L.A. Laboratories, Inc., 7375 Woodward Ave., Detroit 2, Mich., offers its pamphlet on the Klair audio automation data collection system. The system functions by verbal communications between plant and office, and provides automatic recording of production data in the office. Reprints of articles on the system are included in the package.

Laminating press C-6

Harco Industries, Inc., 25 Curtice St., Rochester 5, N. Y. The company's laminating press is displayed in a 4-page brochure. The press will permanently laminate in plastic any type of document up to 11 x 14 inches. The brochure gives operating procedure as well as specifications and dimensions.

Closed circuit TV C-7

Television Utilities Corp., Div. of Nord, New Hyde Park, N. Y. An illustrated brochure depicts the Scan-A-Graph closed circuit TV system.

Acoustical system C-8

Armstrong Cork Co., Lancaster, Pa. A 12-page color booklet depicts the new fire-protective, acoustical lay-in system; panels about 2 x 4 feet in size rest in an exposed grid system designed to withstand intense heats.

Lamps C-9

Luxo Lamp Corp., Dock St., Port Chester, N. Y. Incandescent, fluorescent, combination, and magnifying lamps are shown in a new four-page catalog (#116). Various bases, brackets and stands are also depicted.

Paper cutter **C-10**
The Challenge Machinery Co., Grand Haven, Mich. Folder 650 gives the operating features and specifications of the Champion 30 half-inch power paper cutter.

Tape reader **C-11**
Omitronics, Inc., 511 N. Broad St., Philadelphia 23. Bulletin PTR-7 from the Borg-Warner subsidiary describes a photoelectric tape reader that operates on a system of "chopped" reflected light.

Filing unit **C-12**
Ramsey Co., 116 S. 7th St., Philadelphia 6. Bulletin TFJ-160 explains the uses of Tract-A-File, Jr., a small portable filing unit.

Billing system **C-13**
The National Cash Register Co., Dayton 9, Ohio. How a special system was devised for premium billing at National Insurance Company is the subject of an illustrated case-history. A step-by-step survey of the previous system is given, and the way in which it was revised is clearly illustrated.

Comptometer **C-14**
Comptometer Corp., 5600 Jarvis Ave., Chicago 48. The company's Duplex Model 12D is described in a full color bulletin. The machine has twin dials, one of which stores totals transferred to it from the other dial.

BOOKLETS

Profit sharing **C-15**
Facts about profit sharing are supplied in the booklet, "What Every Businessman Should Know About Profit Sharing." Published by the Profit Sharing Research Foundation (a non-profit organization itself), the booklet answers the questions about this employee benefit that perenially plague business executives. Types of profit sharing programs, objectives that can be expected, trends, pensions and deferred profit sharing plans, effects on stockholders, use of profit sharing plans by small companies, and other pertinent areas are covered. Booklet contains bibliography of works by the foundation. Profit Sharing Research Foundation, 1718 Sherman Ave., Evanston, Ill.

Union elections **C-16**
"Electing Union Officers" outlines the procedure governing union elections under the Labor-Management Reporting and Disclosure Act of 1959. The booklet defines the officers who must be elected and how often, nomination procedure, campaign rules, election procedure, and ways in which an election can be protested. Technical Assistance Aid No. 5, U. S. Dept. of Labor, Bureau of Labor Management Reports, Washington 25, D. C.

Magnetic ink **C-17**
A 48-page booklet that explains magnetic ink character recognition (MICR) and answers 142 most frequently asked questions about magnetic ink check encoding is now available. The booklet discusses the American Bankers' Association specifications for MICR; requirements and costs for check imprinting installations; techniques of imaging masters, check imprinting, and quality control; and details of check book use. The publication is available from the A. B. Dick Co., 5700 W. Touhy Ave., Chicago 48, Ill.

Business comparison **C-18**
"How Does Your Business Compare With Others in Your Line?" asks a new pamphlet by that name from Dun & Bradstreet. This comprehensive annual study of 14 operating ratios in 72 lines of business is derived from a wide sampling of retailers, wholesalers, and manufacturers. The ratios have been offered to business every year since their development in 1931 by Roy A. Foulk. Also included in the booklet is interpretive information on the meaning of the ratios. Single copies of this publication are available from Dun & Bradstreet, Inc., 99 Church St., New York 8.

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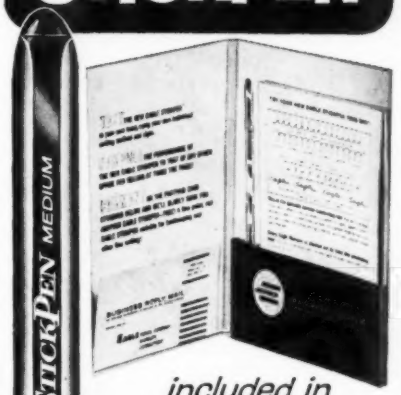

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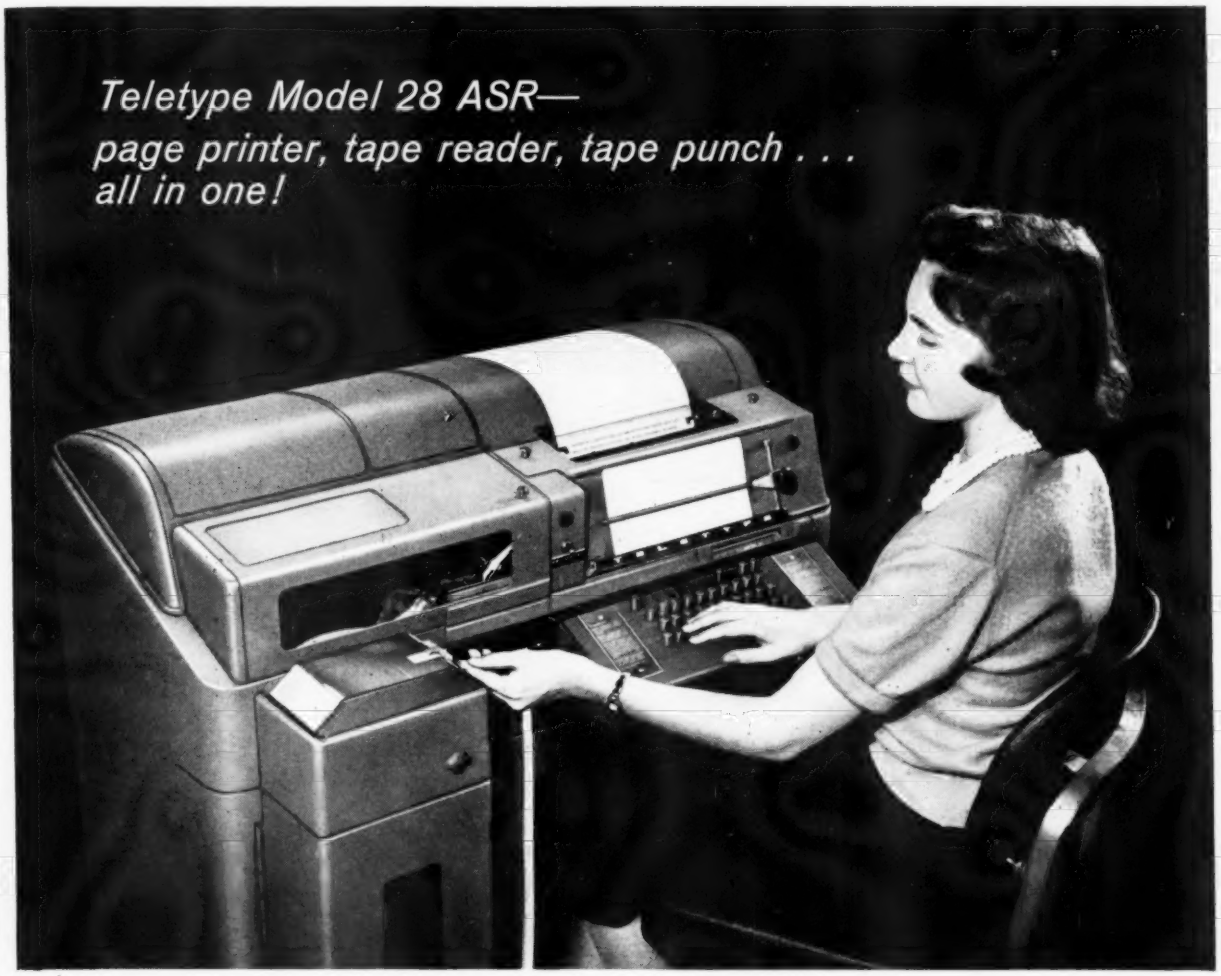

A compact data communications center

The Teletype Model 28 ASR set is a machine of many talents—time and money saving talents that can go to work for you. With it, your data can be distributed to many different locations—in the same building, different parts of the country, even overseas. And you can collect data with equal ease and flexibility.

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And with the Model 28 ASR, you can "run the gamut" with punched tape—encode data into tape . . . transmit from tape . . . integrate repetitive data from previously prepared tape with variable data by keyboard . . . obtain punched tape as a by-product of communications for computer and other business machine input.

All of these data handling facilities are available to you in a compact console, occupying less floor space than required by the average office desk.

Teletype Corporation manufactures this equipment for the Bell System and others who require the utmost reliability from their data communications facilities. Teletype equipment can be used with Data-Phone and other communications services.

For a free brochure on the Model 28 ASR, write to Teletype Corporation, Dept. 36D, 5555 Touhy Avenue, Skokie, Illinois.

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(Circle No. 47 on Reader Inquiry Card)

Editorial

WE JOIN THE PARADE

NEXT MONTH this magazine will appear under a new title—*Administrative Management*. This is the last issue under the old masthead, *Office Management and American Business*. The reasons for the change are many. We feel they are all compelling.

As early as November, 1958, this magazine noted that the scope and activities of the office, under the impact of automation and all the changes brought by this revolutionary change, were expanding far beyond traditional office functions. We predicted at that time that the phrase, "office management" would be superseded by "administration," denoting the company-wide range of activities centered in the office.

During the period since 1958, we have seen that prediction come true in very large measure. As the impact of increasingly elaborate communications and data processing equipment affected more and more American concerns, there was a reversal of old trends toward decentralization, a drawing back of traditional communications and managerial functions to a central office. That office became the nerve center, the communications transfer point for all company activities.

In the process, the person responsible for the office, whatever his title, necessarily was given more authority, necessarily found more and more company-wide functions transferred to his jurisdiction.

In smaller companies, even though such sweeping physical changes did not always take place, the reflection of the changing status of the administrative function has had very much the same effect, has increased the responsibilities of the manager.

The man in charge of the central office today is in charge of far more than the physical limits and personnel of that office. He is in charge of the entire communications network—be it paper, or leased wires, or punched tape—that keeps his company alive and competitive.

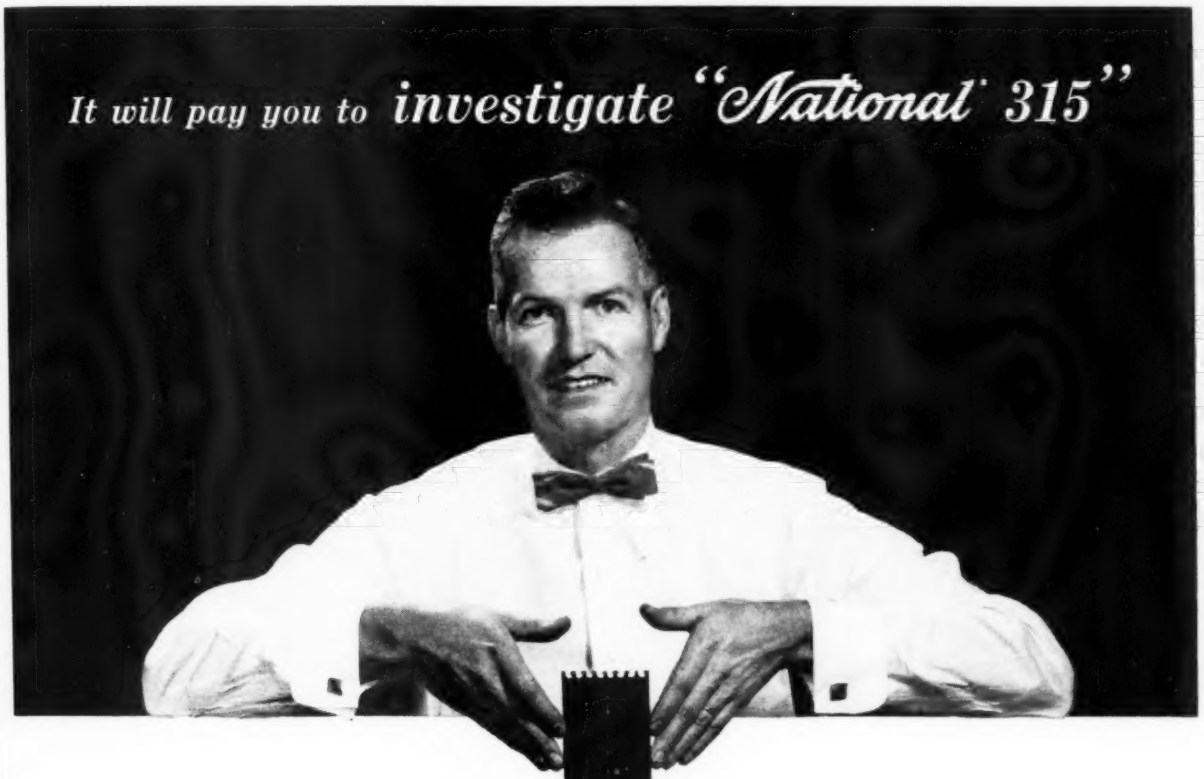
As such he has moved into an entirely new position, one of much wider scope, authority, and responsibility than he has held in the past. And that position is being recognized in more and more companies by the title, "Administrator" or "Manager, Administrative Services." In some, it has already been recognized in the most tangible way of all—"Vice President, Administration."

We have predicted these developments, and reported them as they happened. Now, we join the parade. Because we feel it is a more accurate description of the widened field of interest and responsibility now held by our typical reader, we are changing our title to *Administrative Management*. We feel this new title is more descriptive than the old, and more accurate in a business world which has changed so radically in the last few years. We feel it is a recognition of the change that has taken place in the function our readers perform. We feel it is a title which recognizes the present and looks toward the future, rather than clings to the past.

We realize that our scope is growing, too—that it must if we are to keep pace with our readers. But the word is growth, not change. We see the administrative function as a growing, overall internal operation of the company, covering its communications, information processing, personnel, selection and maintenance of equipment and facilities. We leave to other publications coverage of the company's fundamental activities of sales, production, and finance, except to the degree that these areas depend on the administrative function.

We pledge ourselves to do our best to continue to interpret all the changes and report all the developments that affect the rapidly expanding range of activities centered in the office, and the widening range of responsibilities carried by the administrative executive.

It will pay you to ***investigate "National" 315"***



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C. Addison Brown, President
C. S. T. Co., Louisville, Kentucky

"CST has earned the reputation of being one of the most effective collection agencies in the country through a fast and efficient operation. Offices in cities across the nation plus a 'Flying Adjuster' air service give customers prompt and personal service, with efficiency the key word. Because it best met administrative needs, we selected Globe-Wernicke ECHELON furniture for all echelons at our new home office in Louisville, Kentucky. ECHELON office furniture gives complete unity of design and unlimited flexibility throughout the offices. For executive private offices, wood tops and facades were chosen, while on the general office level laminated tops answered best the long-term maintenance needs. ECHELON desks and chairs, we feel reflect the proper image of CST to our customers."

For his ECHELON executive office, Mr. Brown chose rich walnut tops and facades that blend with the warm wood wall paneling.

General Manager D. C. Scott, V.P., for his heavy work load, selected basically the same desk but with a laminated plastic top.

"Y" leg styling (optional on ECHELON furniture), chosen for the conference table, blends with the smart decor of the completely ECHELON directors' room.

"H" leg styling was chosen for the general office. ECHELON desks with attached typing platforms achieve maximum efficiency. The skillful use of modern colors makes these units as eye-appealing as functional.

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